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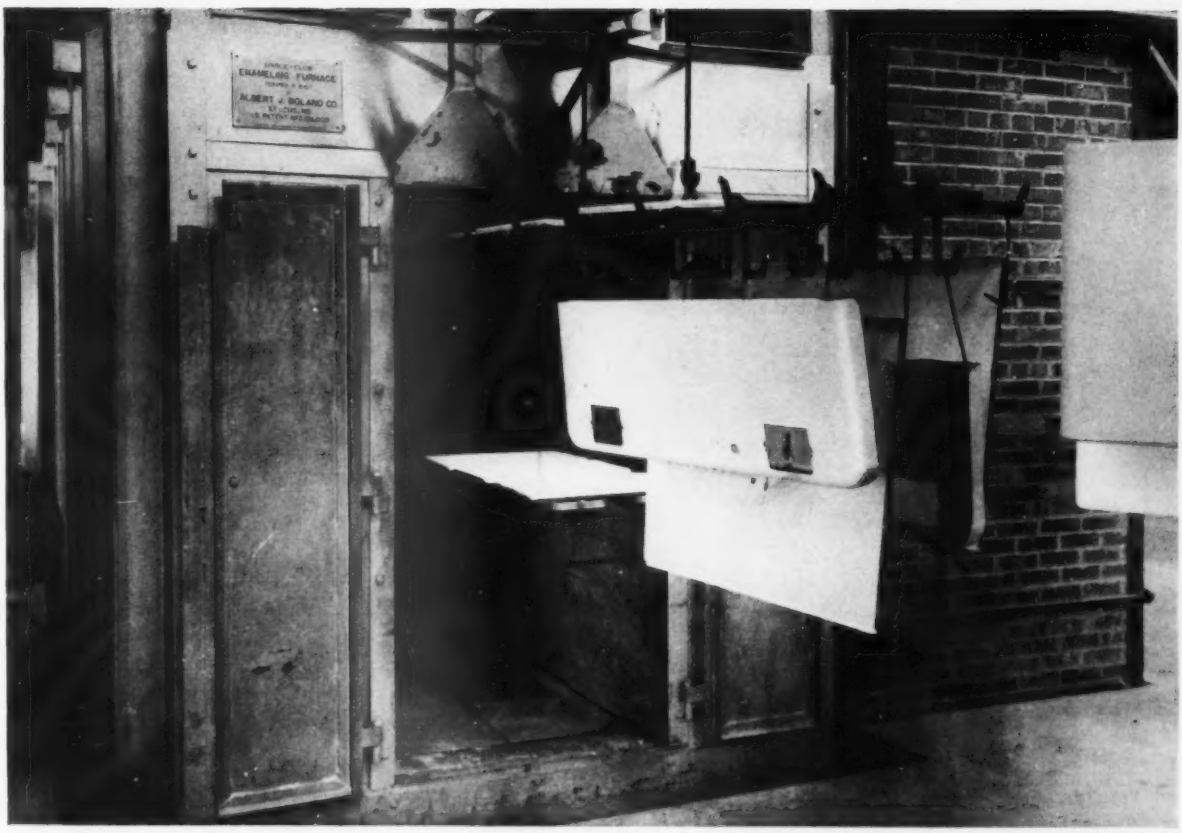

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Glistening white appliances get a better finish, more consistently, when fired in Boland straight away continuous furnaces. Refrigerators, ranges, heaters, table tops, sinks and many other products that must present spotless white finishes to the consumer are best when produced the Boland way.

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- BLANKING
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One of the "babies" of the Verson line is this No. 7½ Open Back Inclinable. Rated at 105 tons capacity it weighs 24,000 pounds and has an overall height of 139 inches.

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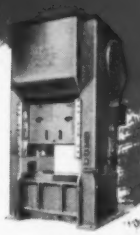
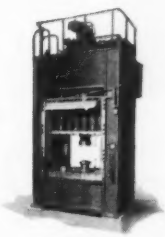


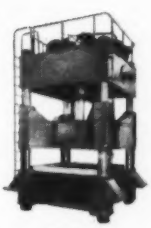
Straight Side Mechanical; Single, Double and Triple Action

Knuckle Joint



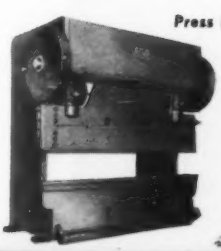
Straight Side Hydraulic; Single, Double and Triple Action

Gap Frame Mechanical and Hydraulic



Post Type Hydraulic

High Production Presses



Press Brakes

A giant of the Verson line is this 3000 ton Verson Full Eccentric Press. It measures 154 inches between housings and stands three stories high. While rated at 3000 tons it has developed 4500 tons under test. Approximate weight is 600,000 pounds.

F ALLSTEEL WELDED PRESS CONSTRUCTION

7 features for your enamels with M&T SODIUM ANTIMONATE

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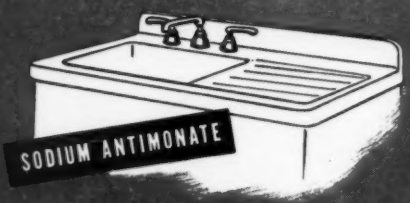
- uniform high quality



You can be sure of the right start to a bright finish for sheet steel or cast iron sanitary ware enamels when you use Metal & Thermit's Sodium Antimonate opacifier.

Exacting methods of manufacture—plus the most modern processing equipment—are your assurance of a uniform, high quality opacifier capable of enhancing both the beauty and durability of enamels.

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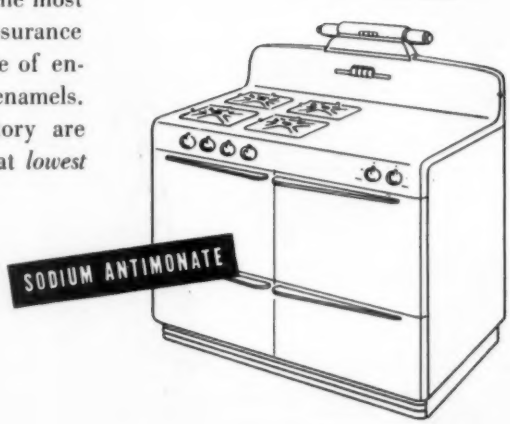

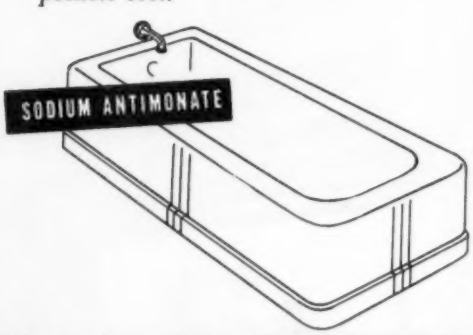

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TITANIUM WHITE No. 77

CENTURY NOW OFFERS THE LATEST IN FINE COVER COAT FRITS, COMBINING *ALL* THE ADVANTAGES OF THE NEW TITANIUM ENAMELS.

YES, this newest frit which Century is now offering does combine the advantages of the new Titanium type frits which the Industry has been talking about — combines them in a white cover coat frit with good color and workability.

Enamelers everywhere are turning to the new Titanium whites for their ability to produce a good-looking, highly opaque, acid resisting finish at greatly reduced weights of application. Century's new white is good looking, it does give excellent coverage at extremely light application weights, and it does give the hard, acid resisting finish that appliance manufacturers and other metal product producers want.

Like all other Century frits, the new No. 77 has been time-proved in production enameling plants. There is over six months of production experience back of No. 77. This production experience includes stove work, signs, steel sanitary ware, reflectors, washing machine tubs and display cases.

Phone or write us for a trial of No. 77 on your product now!

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THE Finish Line

THINGS TO THINK ABOUT — "Half a loaf is better than none" may be considered a hackneyed phrase, but it can be ever so true and fits remarkably well into at least one field for the use of porcelain enamel.

Architectural porcelain enamel, as we have seen it used, has, for the most part, been designed to almost completely surface small buildings or building fronts. That there is a broad market for the use of the material for this purpose is now seldom questioned. Few would claim, however, that the material has gained general acceptance among the country's leading architects, and until this is accomplished the ultimate goal that we should set for architectural porcelain enamel can not possibly be reached.

One suggestion we have to offer in this connection is that we open our eyes and minds to the use of a *combination of materials* when and where such a combination will provide a result advantageous to the ultimate purchaser. Some of the most attractive architectural applications of porcelain enamel that we have seen have combined soft, well chosen colors in porcelain enameled metal with the beauty of the bright metals for trim or relief. If, as is entirely possible, the total use for architectural porcelain enamel can be greatly expanded by encouraging the liberal use of other materials in combination, then let's do what we can to encourage a trend in this direction.

Some effects of the "steel situation"

An entirely different trend of thought, but one that is certainly closely related to the architectural subject, is the effect of the present shortage of sheet metal on the architectural porcelain picture. This product had gained good initial headway when the war broke off supplies abruptly. Now we hear on every side that there is a big demand for architectural porcelain which can not be filled because of the shortage of steel sheets. If all builders could wait until our product is available the situation would be less serious, but, as it is, we see buildings going up every day with substitute materials where architectural porcelain enamel could, and would be used if available.

In another section of this issue there is a news story on a new all-porcelain enameled automatic washing machine. This is great for the industry, for it indicates a trend to the use of porcelain enamel for the exteriors of *all* automatic washing machines which should ultimately follow.

Here is the other side of the picture. At least one or two manufacturers* of conventional type washers are said to be ready to turn to sheet aluminum tubs. According to our reports, this is not due to a desire to change from porcelain enameled steel but, instead, is due to present difficulties of obtaining a sufficient quantity of the proper grade of enameling sheets to give the necessary first-quality porcelain enameled tubs for production.

Such inroads on our business may logically be temporary, but, on the other hand, you can bank on it that the producers of the aluminum, glass, stainless steel and competitive products are going to fight to keep the business which they are in position to get as a result of the enameling sheet shortage.

We feel it is an important problem for our industry, and one that is deserving of the closest consideration by *both* porcelain enamel and steel producers.

We have kept *finish* readers informed on the steel situation by publishing reports by executives of leading steel producers. The information has, in general, pointed to "sometime" in 1948 as a "catching up" period. All we can say is that for the protection of the porcelain enameling industry the date at which *porcelain enameling sheets* are again in normal supply is a most important one.

Dana Chase

EDITOR AND PUBLISHER

finish is mailed free to top executives, purchasing agents, works managers, plant engineers and key plant personnel throughout the porcelain enameling industry. The only obligation of the readers is to furnish essential information for our circulation reports. A form was mailed with the July issue for this purpose. If your form has not as yet been returned, please send it in at once, or request a duplicate, as we must have this information for our records.

Circulation Manager.

* *Reports from the AVIMA convention at Mackinac Island show the situation to be more serious than is indicated in the original editorial.*

CHAINED TO TRADITION OR ALERT TO CHANGE

"EXPERIENCE" as a revered adjective is sometimes misleading . . . . . for experience chained to tradition adds little . . . . impregnated with "change" it contributes much to advancement in science—to better living! It is the keynote of progress! PEMCO is definitely proud of its years of experience in the field of porcelain enameling. Proud, because many of the advancements in the industry have been the result of Pemco experience thoroughly seasoned with "change". . . of alertness to the needs and demands of this changing world.

Things are being done today at Pemco that were never thought possible by the industry a few years ago. New beauty—new finishes—new economies—remarkable uniformity have been attained in porcelain enamel frit because of the Continuous Smelting Process* exclusive with Pemco. But even this is but one of the "firsts" credited to our efforts. Yes—Pemco has experience—but it is experience "alerted" to change.

The knowledge that Pemco had gained in the years is yours for the asking—to help solve your problems—to be of service.

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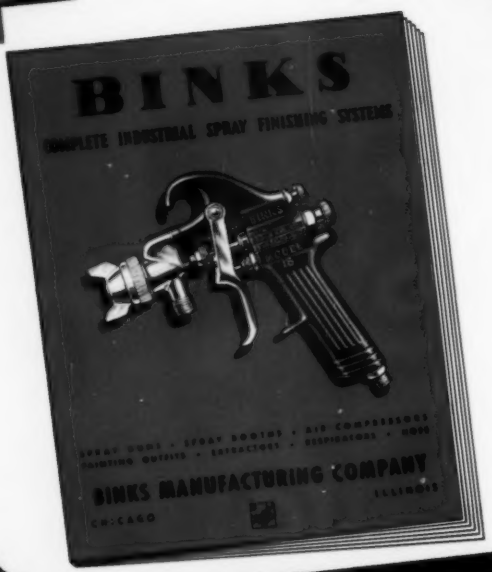

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Those who have learned to rely upon Binks throughout the years for the finest and fastest in ceramic finishing equipment will find this new book a big improvement over previous issues. Those who do not have a Binks Catalog-Data Book in their reference library will find No. 96 the key to the finest line of spray finishing equipment obtainable for ceramic finishing at production speeds.

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A new southern stove plant

for straightline production

this plant uses propane and electricity for dryers, ovens and furnace

By Gerald Eldridge Stedman

Exclusive feature finish

Go south 57 miles from Nashville, through the best Tennessee walking horse breeding country, and you come to Lewisburg, town of 6,000 population, teeming with industry . . . pencil manufacturers, shoe factories, castings, stoves. Largest plant there is that of the Florence Stove Company, formerly the Marshall Stove Company.

Here, I got the surprise of my trip. Who would have expected in this somewhat out-of-the-way place to find the first fundamental postwar plant layout, perfectly engineered for straightline production with no back tracking, with all elements integrated and efficient expansion premeditated, incorporating the best arrangements, equipment and methods of plant design learned from war production? Well, I found it in the Florence plant at Lewisburg, Tennessee.

Originally this was the Marshall Stove Company, manufacturing cast iron stoves and heaters. During the war it was converted to produce magnesium castings for aircraft. Because of its rapid national growth in prewar years, Florence Stove Company, one of the leaders in the range and heater fields, saw the need for greater plant capacity than that afforded at its factories in Gardner, Mass., and Kankakee, Ill. During the war period, Florence bought Marshall Stove Company and decided to completely convert the plant to sheet metal fabricating at the war's end.

In 1944, George B. Colburn, a Florence executive with broad experience in plant engineering and manufacturing through his sixteen years as superintendent of the Gardner plant, was elected vice president and put in charge of the Lewisburg project. The timing of the assignment was perfect. He came to Lewisburg in 1944 to build the new plant, make a clean sweep of everything, start from scratch, and with the assignment to make it the latest and best. He retained a number of the existing administrative and executive staff, including E. O. Nelson, now purchasing agent, and to whose arrangements and guidance I am indebted for the plant visit upon which this article is based.

Work started July 1, 1945. Colburn had the facilities of Sanderson & Porter for engineering and construction. Ferro Enamel Corporation and Newcomb-Detroit Company engineered and installed the porcelain enamel plant and the cleaning and painting department, respectively. Press operations began May 1, 1946. The first range rolled from final assembly on September 12, 1946. Behind it is a spectacular story of plant construction.

Two L & N Railway sidings with an additional double 580′ warehouse track, serviced by eight loading docks on the east front, and a spur of the N.C. & St.L., with two sidings into the wood mill and within-plant receiving area at plant rear, provide unusual rail transportation into the 18½ acre plot on which the 344,280

Aerial view of the Florence Stove Company plant at Lewisburg, Tennessee.

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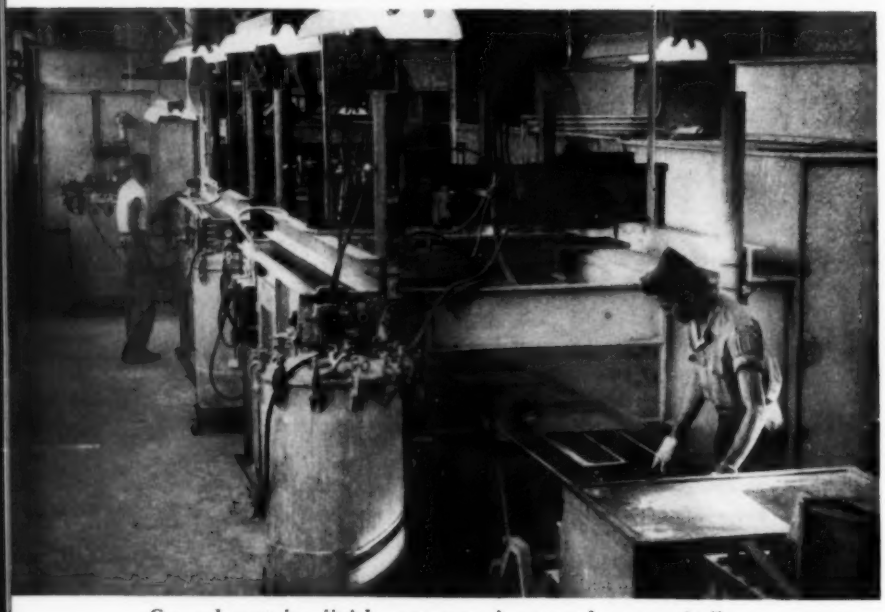
Unloading pickle baskets at ground coat dipping station.



Ground coat for finish coat parts is sprayed automatically.

Cover coat brushing table with furnace chain in background.

sq. ft. of floor area is located.

Plant has large water and fuel and raw material storage

Facilities include a power plant with 165′ chimney, two 234 hp boilers (provisions for one other), conveyorized coal unloading into mechanized hopper delivery, two compressors (825 and 500), a 75,000 gallon water tower, 30,000 gallon propane storage, saw mill and lumber storage to handle the 2½ million bd. ft. (150 carloads) required per year to crate finished ranges and heaters, a 97,750 sq. ft. warehouse capable of holding 350 carloads of finished ranges and heaters (to facilitate year-round employment), and four assembly lines (two 225′, two 120′) with a kindler assembly line aloft having four rolling machines, chute-to-floor delivery and production possibility of 6,000,000 kindlers per year. The plant has a total capacity of from 800 to 1,000 range and heater units per day. It has unit heating throughout for cold-warm seasonal atmosphering, 15 roof ventilators with 42″ fans, modern clear story lighting, overhead bulldog power cables (permitting machine spacing any way), overhead fluorescent lighting by trolly duct (permitting installation of lights without wires), individual lockers, fountains, private toilets and showers for colored and white employees, and first aid room. Employment is presently 450 and will peak between 900 and 1100 under full operation, now held back only by severe sheet steel and metal shortage. This is somewhat the result of a penalty arising from the fact that this plant has never previously had much sheet steel requirement—the old plant largely producing cast iron.

Sheet metal handling facilities minimize handling problems

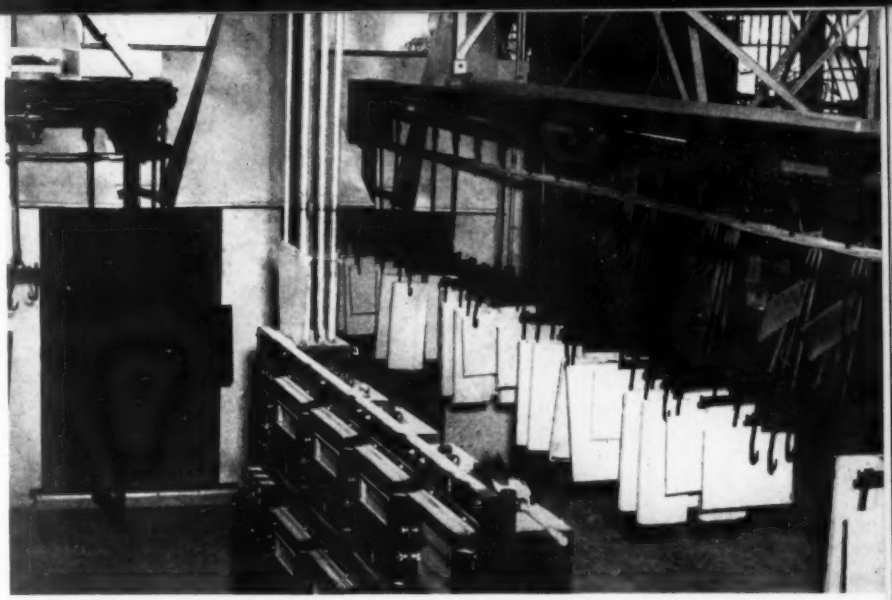
Plant is laid out to conform to terrain contour so that much of it is at-11′ elevation. Running as a siding 260′ in from the N.C. & St.L. spur at the west, a 220′ pit within plant accomodates a single unloading track, capable of spotting 3 cars of steel inside the steel storage bays. These have 4,674 sq. ft. of storage

and shear area, divided by a 5′ aisle with 850 sq. ft. of scrap bailer and 1,100 sq. ft. of pipe storage at the far end. Cars are unloaded at floor level, this pit arrangement being the first of many evidences of the unusual care that has been taken to eliminate as much hand labor in material handling as possible. Hot and cold rolled steel and enamel sheets in 12 to 30 ga. are unloaded by a 5 T. overhead crane with 80′ span which services sheet delivery to shears as well as storage. Flow is from west to east in a straight line. Essential side departments are set up to serve into the press department with least movement. There is a battery of 10 power shears, largest being 120″. From them, work is craned into the 3,146 sq. ft. sheared-storage bay. Flow of parts is from this shear room through the press department into the basement where it is then conveyed either to the paint department or porcelain enamel department, depending upon finish to be applied.

The central 21,800 sq. ft. press room contains 60 presses, all new, in capacities from 10 T. to 400 T. This room is serviced by 8′ aisles. At its north side, the 3,080 sq. ft. pipe and spindle shop, 7,700 sq. ft. die and pattern storage (700 die inventory, some weighing 9,000 to 12,000 lbs.—for example, 14 press operations are required for one range top) and a 3,080 sq. ft. maintenance shop are positioned for efficient functioning. On the south, a 9,680 sq. ft. tool room with 20 tool makers and latest equipment make and repair dies; floor arrangement being to have heavy die rails and benches nearest the press room work area. A 6,600 sq. ft. brazing, spot welding and soldering area and a 4,850 sq. ft. gun welding bay complete the welding department. The range chassis, for example, is fabricated with portable overhead spot welders in 75 shots. All work from press room proceeds in straight line to the 16,600 sq. ft. green storage area.

Organic finishing

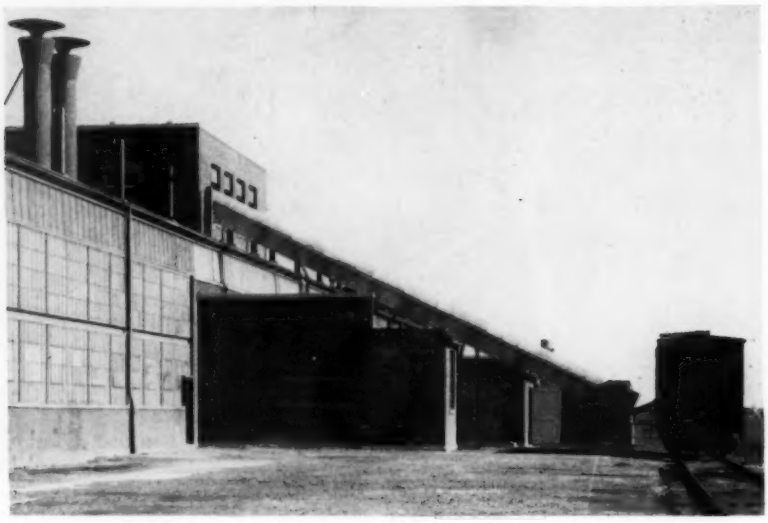
Here, the work to be painted is moved to the 2,300′ bonderizing and paint conveyor system which uses



Typical conveyor load for the 1000 kw continuous furnace.

Final inspection station with finished ware conveyor on right.

Checking enamel thickness in the plant control laboratory.



Slab conveyor for elevating frit from box car to storage above mill room.

baskets and 20 slot, coat hanger type hook holders. The chain travels at 12′/min., carrying the work to cleaning and bonderizing. From the U-type 50′ cleaner, work crosses over by conveyor through a U-type 40′ drying oven heated by propane at 300° F. using single proportional mix burners. This cleaning room is 82′ x 115′.

Riding on the same conveyor the cleaned and bonderized pieces move aloft and in a compound loop enter and are dipped in a 3,000 gal. black japanning vat. A buried well underneath is arranged to drop the entire japan load by valve in case of emergency. The set-up includes CO_2 extinguisher protection. Dip moves to drain and into the japanning oven where pieces are baked 425° F. for 45 minutes. This oven is 60′ x 20′ and arranged in a double U, propane fired. Work then goes to finish storage.

Pieces to be finished in white synthetic are transferred to another 500′ overhead chain conveyor and are moved through water washed booths. There are two booths: one 15′, the other 20′, with two stations at each booth in this pressurized spray room which is 60′x20′. The room has a heated, filtered air supply which keeps it under slight pressure during spraying operations. Parts then continue by conveyor through the U-type 55′ synthetic enamel baking oven where they receive 325° F. temperature in 20 min. cycle. This, likewise, is propane fired. In normal operation, the plant will consume approximately 25,000 gal. of propane per month. Work then proceeds by hangers having five divisions and varied wire holders to inspection and into finished storage. This 14,020 sq. ft. sorting and storage area is directly in front of the 320′ x 96′ final assembly area with its four parallel lines—two 225′ and two 120′ long.

A completely new porcelain enameling plant

We come now to the completely new porcelain enameling facilities, where I. E. Oaks is superintendent. He came here from the frit division of Ingram-Richardson, Frankfort, Indiana.

Back of the press room, a 16,600 sq. ft. green storage area is located at basement level. The paint conveyor loading station is located at the south end of this storage. The rest of the space receives parts from press room for porcelain enameling. These pieces are loaded in the basement, into 7′ x 4′ pickle baskets, 32″ deep, and moved by roller conveyor to loading zone where they are elevated by a 2 T. hoist to the monorail serving pickling sequence.

"Push-pull" ventilation system for pickle room

The work comes to the 100′ x 20′ ground floor pickling room. Its 12 tanks in line are recessed in pit and served by monorail. A unique push-pull ventilation exhausts all steam and fumes across vat surface. This is accomplished by a 4″ pipe having an alignment of 3/16″ drillings, spaced 2″, running the entire length of the vats. It is serviced by a blower and butterfly valve arrangement providing 4 oz. pressure at each drilling, pushing air out across vat surface to hooded exhaust at vat rear. There are three such exhaust hoods hooked up with fans on the roof. Tanks all have the same dimensions, 8′ x 5′ x 5′. The pickling sequence follows:

Tank No. 1 uses a high alkaline cleaner at boiling temperature, concentration being 8 oz./gal. Soak time is 8 minutes.

Tank No. 2 is a soft water boiling rinse. Water softener equipment supplies all pickle room alkaline and rinse tanks.

Tank No. 3 has a high alkaline cleaner at boiling temperature, concentration 8 oz./gal., time interval of 8 minutes.

Tank No. 4 is a soft water, boiling rinse.

Tanks No. 5 and 6 are acid baths, 6 to 7 per cent sulphuric, time interval 7 minutes. These vats are heavy, acid-proof, brick lined.

Tank No. 7 is a tap water, cold rinse.

Tank No. 8 is a nickel bath, 2 oz./gal., concentration, time interval 3 min. Two filter presses along the pickling aisle here filter the neutralizer and nickel solutions. Nickel solution is filtered 4 hrs. out of each 8 hrs. of operation.

Tank No. 9 is tap water, cold rinse.

Tank No. 10 is a soda ash neutralizer, 120-125° F., ½ oz./gal. concentration, 3 to 4 minutes.

Tank No. 11 is a boiling borax neutralizing bath, ⅜ oz./gal. concentration, 3 to 4 minutes.

Tank No. 12 is a dryer, submitting the work to 250-275° F. hot air.

The ware is then moved to pickel bank and is ready for porcelain enameling.

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Porcelain enameled mouldings

for all-steel poster panels

cooperative development of Outdoor Advertising Association of America offers new outlet for porcelain enamel

By H. H. Wineburgh • PRESIDENT, TEXLITE, INC., DALLAS, TEXAS

IT is estimated that there are over 300,000 poster panel structures in use in the United States, and many additional thousands in Canada.

At a minimum replacement value of well over $60,000,000, the replacement job becomes one of great importance. The fact that the newest type of structure incorporates moulding sections that are porcelain enameled should be sufficient to focus the attention of the porcelain enameling industry on this comparatively new development.

The anticipated expansion in poster advertising will further increase this market for the porcelain enameling industry.

The background of the development had its inception during the early days of the war, when members of the Outdoor Advertising Association of America were making their postwar plans. The Committee was formed under the chairmanship of W. Rex Bell, a man who had been president and chairman of the board of OAAA for five years and had experience not only in the operation of an outdoor advertising business but, also, as a buyer of space.

Members of the Association raised a special fund of approximately $50,000 for the development of their plans. After consideration in committee meetings, it was decided to employ the services of Raymond Lowey Associates, of Chicago, to design a new moulding to supplant the green crown moulding which had been standard for over twenty-five years. In this work, OAAA collaborated with the Poster Advertising Association of Canada.

Outdoor Advertising Association Postwar Planning Committee

Chairman: W. Rex Bell, president, The Three B Co., Terre Haute, Ind.

Harry Crawford, president, Crawford Adv. Agency, Mobile, Ala.

George W. Kleiser, chairman of the board, Foster and Kleiser Co., San Francisco, Cal.

Gilbert Haynes, president, Foster and Kleiser Co., San Francisco, Cal.

Martin T. Price, former president, Savannah Poster Adv. Service, Inc., Savannah, Ga.

B. W. Robbins, president, General Outdoor Adv. Co., Inc., Chicago, Ill.

B. L. Robbins, executive vice president, General Outdoor Adv. Co., Inc., Chicago, Ill.

Frank Dunigan, president, The Brinkman Corporation, Fort Wayne, Ind.

K. H. Fulton, president, Outdoor Advertising Inc., New York, N.Y.

Considerations in the design of a new type poster panel

Many problems presented themselves. The new panel must be attractive to the public because the industry has always been very conscious of its public relations responsibility. It must be enthusiastically accepted by the advertisers and their agencies who, after all, pay the bill. In this respect, further questions arose.

First, should the panel be a 24 sheet, as formerly, or a 26 sheet?

Second, should the new trim be merely a new departure, or could it be designed to attract additional attention to the advertising copy rather than to the moulding itself?

The next problem was that of economy—a panel that could be entirely salvaged. This was particularly important because in the last few years activity in real estate has made the renewal and replacement of pan-

Panel construction was part of a recent operational clinic conducted by the United Advertising Corporation, Dallas, under the supervision of Mr. Wineburgh, with the assistance of C. M. Keesling. Left: Workmen fit Steelox sections into place. Right: Porcelain enameled mouldings are fitted to the rails, three sections top and bottom, and two on each side.

These United Advertising Corporation panels mounted on a building roof afford greater potential readership and product recognition.

els an expensive item of operation. Furthermore, with increasing costs of material and labor, a panel that could be erected and dismantled easily, with no loss of material, would have the appeal necessary to encourage the operators to discontinue building the old type panel and build the new one instead.

A $64,000,000 question

At this point it must be borne in mind that we are talking about a big investment. While there are no absolutely accurate figures available, because plant capacities are constantly changing, it is estimated, as I mentioned before, that there are now over 300,000 poster panels in this country alone, plus the thousands in Canada. At a minimum replacement value of over $60,000,000, the question of what to do and how to do it becomes one of great importance. In one of the early meetings in Chicago, in 1944, several firms demmonstrated new posts, back structures and methods of construction. Raymond Lowey Associates presented models of three entirely different panels. It was decided to have variations of the basic design made into full-size panels.

The suggestion for a structure submitted by Armco Drainage and Metal Products Company, a subsidiary of American Rolling Mill, was to be developed further and to be used in conjunction with the new moulding.

Many types of finishes were considered for the new moulding. They included paint, synthetics, baked enamel and porcelain enamel.

The writer, having the dual interest of an outdoor advertising plant operator and a porcelain enamel manufacturer, agreed that Texlite would fabricate the moulding for the experimental panels. Four different designs were put in process —three recommended by Lowey, and one by R. W. Olmsted, chief engineer of Foster & Kleiser.

Armco built four identical back structures and sections and these were erected, using the four different mouldings made by our company, in Armco's snow-covered baseball park in early December, 1945. Various types and designs of bases were also on hand for consideration.

The Committee made a thorough study of the new design. Among other points considered was whether

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This panel, near South Bend, Indiana, has a porcelain enameled moulding, Steelox sections, and Olmsted prefabricated tapered steel backstructure uprights.

Industry coordinating committee report

IN the April, 1947, issue of *finish* a complete outline of the purposes and plans of the nationwide Coordinating Committee for the porcelain enameling industry was published. It will be remembered that the first purpose of the Committee is to increase the effectiveness of individual groups by coordinating the activity of the Porcelain Enamelers Clubs into a more unified program. In addition, to further coordinate the industry activity, the work is carried on in cooperation with the national organizations, the American Ceramic Society and the Porcelain Enamel Institute.

Each Enamelers Club is represented by members appointed to the Committee, and the ACS and PEI through the general secretary and managing director, respectively.

Two Coordinating Committee meetings are held annually—one in conjunction with the ACS annual convention; the other at the time of the annual PEI Forum for plant men.

The Atlantic City meeting

During the ACS convention at Atlantic City, the industry Coordinating Committee held a luncheon meeting at the Traymore Hotel on April 23. Members present were:

Eastern Club: N. R. Klein and G. H. Spencer-Strong.

Central Club: N. H. Stolte and W. N. Noble.

Chicago Club: Wayne Deringer and R. L. Cook.

Pacific Coast Club: Not represented.

Present in the interest of the Michigan Enamelers, who are considering the formation of a club, were: J. W. Sampson and S. E. Hemsteger.

Edward Mackasek and Charles Pearce represented the PEI and the ACS.

Chairman of the meeting was W. J. Plankenhorn, University of Illinois; secretary, Dana Chase, *finish*.

The six purposes of the Coordinating Committee *(see April, 1947, issue of finish)* were again brought up for review and discussion. It was agreed that much could be gained by each of the clubs, as well as by the national organizations through active work in carrying out the purposes as originally outlined. It was urged that club secretaries be reminded of their responsibilities to keep copies of correspondence pertaining to meetings, club reports, etc., going to secretaries of all active clubs, and to the general secretary of the ACS and the managing director of the PEI in instances where the information might be helpful or useful to them.

Michigan may organize

The first order of business was the discussion of the possibility of assiting enamelers in the Michigan area in a determination of whether a club for that area is needed and wanted by active enamelers. S. E. Hemsteger, Briggs Manufacturing Company, was suggested as acting secretary to handle required correspondence. On a motion by Nathan Klein, seconded by W. N. Noble, it was decided to take before the individual groups the suggestion of underwriting a mail survey to enamelers in the Michigan area prior to the next Coordinating Committee meeting. (This survey is now being conducted.)

Chicago to help ACS

The Chicago Club has been asked by the ACS to assist in connection with the 1948 convention scheduled for the Palmer House, Chicago. Club activity will be in cooperation with the Chicago Section of ACS.

Edward Mackasek suggested that the best way for the clubs to assist

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Photographed at the Atlantic City luncheon meeting of the Coordinating Committee are, reading clockwise: Plankenhorn, Chase, Klein, Sampson, Mackasek, Hemsteger, Pearce, Stolte, Spencer-Strong, Noble, Deringer and Cook.

Porcelain enameled airport insignia

A RECENT testimonial from airport authorities at Reading, Pa., praises the durability of two porcelain enameled insignias installed on the hangar there in 1939.

Because the five-color seals, as well as the one-color letters, have retained their original lustre after 8 years' exposure to the elements, the Reading airport management has been well pleased with the installation for which they have not had to spend a penny for upkeep.

The seals and cut letters were fabricated and porcelain enameled by J. M. Seasholtz & Sons, Inc., Reading, Pa.

They cut the seal design with only one stencil. Additional cuts in the stencil were made after each color was applied and fired, precluding the need for multiple stencils.

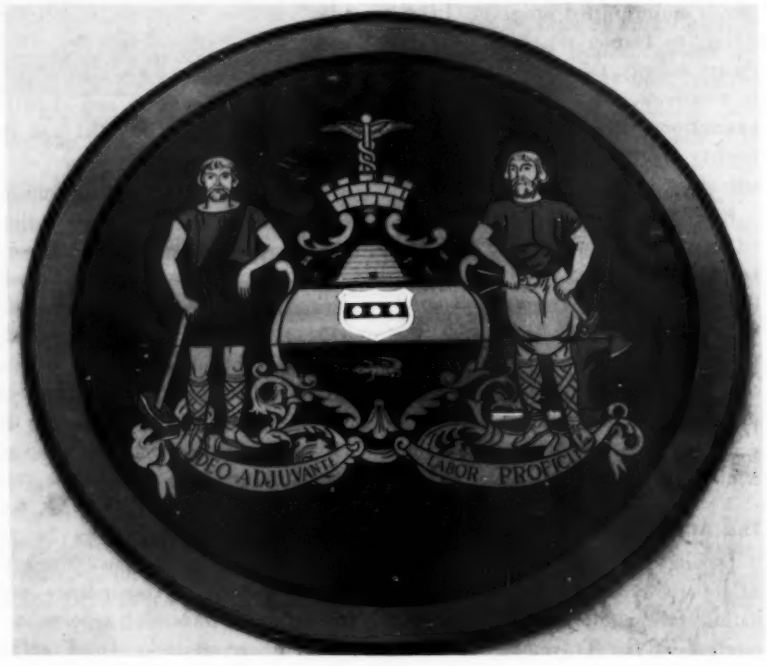
The following enameling detail is found in the seals: skirts of the men and the wide rims in blue-green; background in red; shield with white center and black background with ivory trim and crown; ribbons, legs of men, and scroll work in ivory, and the small outside circles in black.

The seals are 80 inches in diameter. Each was made in two equal parts — for greater ease of handling both in the shop and on the erection site. They were fastened from the front and anchored in stucco. The bolt heads are also porcelain enameled.

The green cut letters stand out on the dull cream hangar background, and their bright finish affords legibility at quite some altitude above the hangar.

At the dedication ceremonies in 1940, the people of Reading exhibited at least as much, if not more, enthusiasm for this event as for any affair in the city's history.

The Reading airport serves several commercial airlines, many air-minded amateur groups, and Military personnel.



The five-color insignia and view of the Reading Airport terminal showing porcelain enameled insignia and letters.

The technique of job evaluation

equitable wages are the logical result of proper evaluation methods

By Howard L. Taussig • McCLURE, HADDEN & ORTMAN, INC., MANAGEMENT ENGINEERS, CHICAGO, ILLINOIS

ONCE in a while most of us feel we are underpaid. The feeling usually centers around the fact that we know someone who makes more money doing the same kind of job, and perhaps doesn't even do it as well. Individuals generally believe their contribution is worth more than their neighbor's, whether true or not.

If we were all paid exactly what we are worth, according to the value of our contribution, there would still be plenty of exercise for our "persecution complex." One of the saddest situations in today's industrial picture is that workers are not paid in proportion to their contribution, which adds man-made fuel to the natural fire of individualism.

Expressed in its simplest terms, some workers are paid less for more work but even when pay is adjusted there may be trouble, due to human nature. Where a maladjusted wage structure exists there is no excuse for not knowing it. Job Evaluation discloses wage inequities and provides a picture (not a remedy) showing where and how much wages are out of line.

What is job evaluation?

Let us assume a plant in which the total paid for all wages is sufficient, but not logically distributed. Joe gets $65.00 per week and is ready to quit, strike, or fight because he knows that others get $70.00 per week for comparable work. If the same man felt that others got the same or less he could be happy.

Job Evaluation is nothing more than the science of measuring all job classes and assigning each one a rating which will show its numerical relation to other jobs in the plant, and perhaps in the industry.

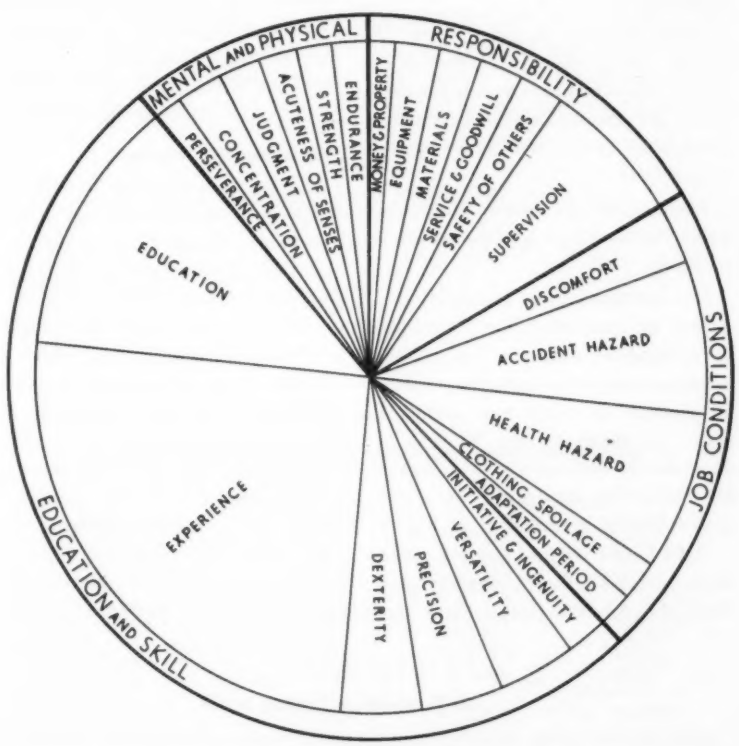
How is it done?

The first step is to divide the jobs into classes of work so that each class can be covered by a single job description.

These job descriptions do not reflect individual persons but rather the actual duties and requirements of the job itself. All sprayers, for example, would be one class and would have one job description. If, however, the sprayers had varying duties and responsibilities so that they were not interchangeable, then there would

FIGURE I

JOB CHARACTERISTICS



JOB CHARACTERISTICS
FACTORS & MAXIMUM J.E. POINTS

RESPONSIBILITY		JOB CONDITIONS		EDUCATION & SKILL		MENTAL & PHYSICAL	
MONEY~PROPERTY	8	DISCOMFORT	16	EDUCATION	72	PERSEVERANCE	8
EQUIPMENT	12	ACCIDENT HAZARD	44	EXPERIENCE	144	CONCENTRATION	12
SERVICE~GOODWILL	12	HEALTH HAZARD	44	DEXTERITY	22	JUDGMENT	12
MATERIALS	12	CLOTHING SPOILAGE	10	PRECISION	22	ACUTENESS OF SENSES	10
SAFETY OF OTHERS	12	ADAPTATION PERIOD	10	VERSATILITY	22	STRENGTH	10
SUPERVISION	40	-	-	INITIATIVE~INGENUITY	12	ENDURANCE	10
TOTAL	96	TOTAL	124	TOTAL	294	TOTAL	62
PERCENT OF TOTAL J.E. POINTS							
16.5		21.5		51.5		10.5	

FIGURE II

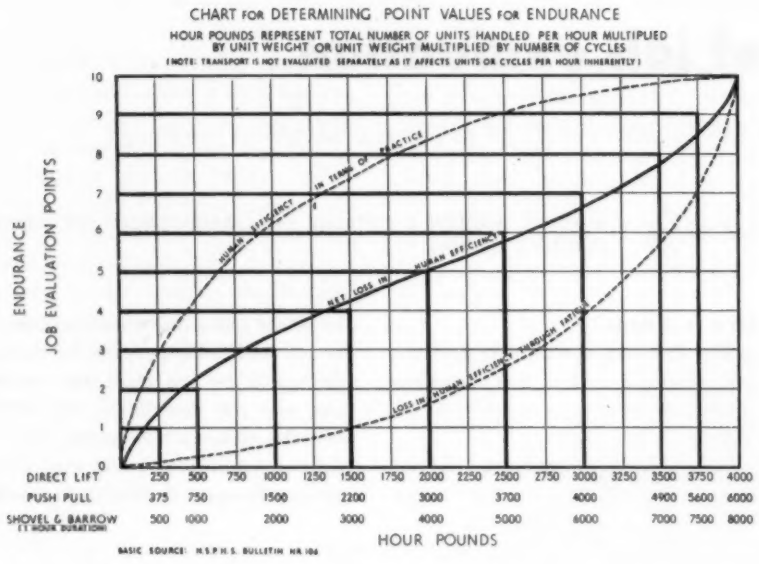


CHART FOR DETERMINING POINT VALUES FOR ENDURANCE
HOUR POUNDS REPRESENT TOTAL NUMBER OF UNITS HANDLED PER HOUR MULTIPLIED BY UNIT WEIGHT OR UNIT WEIGHT MULTIPLIED BY NUMBER OF CYCLES
(NOTE: TRANSPORT IS NOT EVALUATED SEPARATELY AS IT AFFECTS UNITS OR CYCLES PER HOUR INHERENTLY)
ENDURANCE
JOB EVALUATION POINTS
0 1 2 3 4 5 6 7 8 9 10
HUMAN EFFICIENCY IN TERMS OF PRACTICE
REST LOSS IN HUMAN EFFICIENCY
LOSS IN HUMAN EFFICIENCY THROUGH FATIGUE
DIRECT LIFT 250 500 750 1000 1250 1500 1750 2000 2250 2500 2750 3000 3250 3500 3750 4000
PUSH PULL 375 750 1500 2200 3000 3700 4000 4900 5600 6000
SHOVEL & BARROW (1 HOUR DURATION) 500 1000 2000 3000 4000 5000 6000 7000 7500 8000
HOUR POUNDS
BASIC SOURCE: N.S.P.H.S. BULLETIN NR 106

be as many classes of sprayers as necessary.

Each job class is then rated. A typical rating scale is illustrated by Fig. 1. The maximum points for each factor are shown and the percentage breakdown of the four main groups is indicated.

Each of the 23 factors illustrated under the four main groups is a study in itself.

It is necessary to be absolutely consistent in appraising the 23 factors as applied to different job classes, consequently it is desirable to base all ratings on some type of yardstick. To illustrate how this can be done let us look at our "yardstick" for measuring *endurance*, as shown under *Mental & Physical* in Fig. 1.

With Fig. 2 we find our job evaluation points for the *endurance factor* from the job description, and then we check with the descriptive ratings listed on the reverse side of the chart, shown as Fig. 3. We are thus assured of uniform evaluations.

Some such technique is employed for each of the other factors in turn.

Charting the results

When each job class is assigned its total job evaluation points they can be placed in numerical sequence and charted. If expressed as a graph we have a complete picture (Fig. 4).

The construction of the graph involves considerable detail which need not be gone into, except to say that the correlation line (diagonal) is set by a formula employing the method of least squares and the brackets, or rectangles, are set by constructing lines at a computed distance above and below the correlation line.

The job evaluation points are listed along the bottom and the hourly wages along the vertical axis. The dots represent each job class measured, and a glance will tell which ones need adjustment and how much. The proper vertical placement of an individual within his bracket depends on the merit of the individual and can be checked periodically by the foreman on a merit-rating sheet which is provided for the purpose.

Diagnosis, not a cure

The graph is so constructed that the entire amount previously paid for wages is not changed, but the distribution of that sum may be rearranged. The jobs which are too low or too high should receive immediate attention. To make comparisons on a plant basis the correlation line of one plant must be compared with another, or with the correlation line of the industry. To compare jobs within a plant, the variations of jobs from the plant line must be measured.

Left to itself, wage practice becomes distorted in almost every case. The man who has worked in the shop twenty years deserved raises, but the fellow who has been there six months can sometimes prove he is producing more than the old timer. Both deserve consideration. *Experience* is a factor and is considered in job evaluation. Output is a factor in merit rating and helps to determine in what level of the bracket an individual belongs.

Labor leaders sometimes accept whatever wage structure exists at the time they come in, and interpret all unrest as demands for a general increase. The facts may be that the unrest stems from the errors in relative worth reflected in the payroll, which a general increase can only make worse.

Installation and acceptance

Job evaluation can be conducted industry wide or for an individual plant. Where it has not previously existed, it provides for the first time a factual basis for wage discussions. It places emphasis on the relative importance of one job to another from the standpoint of required effort and value to the company.

If outside help is contemplated, the

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FIGURE III

Job Evaluation Rating Scale

ENDURANCE is the ability to sustain physical effort or body strains with but little rest during the work cycle.

Description	*Points*	*Examples*
No sustained exertion	0	
Little if any body strain	1	
	2	
Ordinary sustained exertion. No unusual strains	3	
	4	
	5	
Considerable strained exertion, without opportunity to rest or relax	6	
	7	
Exceptional sustained exertion. Unusual physical strains. Difficult body positions	8	
	9	
	10	

What are the facts

on LP-gas range volume?

an analysis of LP's place in the current range market

By Ken M. Davee • DAVEE, KOEHNLEIN & KEATING, CHICAGO, ILLINOIS

Exclusive feature finish

Liquid petroleum gas ranges account for approximately one-sixth of all standard type ranges produced, including electric and ranges for natural or manufactured gas. Analyses of the cooking and heating equipment industry indicate a tendency for LP ranges to take a greater share of the standard range market over the past nine months. Comparisons are confined to this period since LP ranges were not singled out previously in Department of Commerce data.

In a three-month period for which comparable data is available, the total standard range production divided as in Table I.

Production of liquid petroleum gas ranges showed a slight tendency to gain percentagewise on traditional gas ranges in the last quarter. Whether that was the result of a relatively increasing demand for LP ranges or merely reflected varying production conditions is, of course, subject to conjecture. The relation of LP range production to production of traditional gas ranges for the past nine months is shown in Table II.

Total liquid petroleum gas range production, in addition to the standard model for which data is furnished in Table II, includes the "apartment range" and the combination range designed for liquid petroleum gas and oil. During the nine-month period (Table II), in addition to the standard model, 53,945 apartment type and 12,757 combination ranges using liquid petroleum gas were produced. The relative importance of the three types is indicated in Table III.

Production in relation to backlog

The largest volume of unfilled orders for liquid petroleum ranges, as is shown by Chart I, was recorded last October. Other gas ranges reached peak demand in October, also. A correction was instituted the first of the year, and since then the backlog has remained level under 150,000 units until April, the last month for which data is available, when an increase to almost 154,000 units was recorded.

When the unfilled backlog was at its peak, better than seven months (see Chart 2) at the then current production rate would have been required to work it off, provided no additional orders had come in. Currently, less than four months production would eliminate the backlog, not considering new orders. But the new orders received since the first of the year absorb the demand completely and leave the backlog untouched. The unfilled demand for other gas ranges has this same relationship to current production; four months at the current rate would eliminate it, but there has been no reduction in

TABLE I
Standard Range Production

	Per Cent of Total Units Produced	Per cent of Total Factory Sales Value
Natural or Manufactured Gas	55.37%	48.73%
Electric	28.64	36.77
LP-Gas	15.99	14.50
	100.00%	100.00%

TABLE II
LP and Other Gas Range Production Compared (Units)

	LP	Other	LP as % of Other
August, 1946	31,292	113,245	27.63%
September	30,586	99,506	30.74
October	34,867	118,388	29.45
November	28,532	100,792	28.31
December	23,335	85,404	27.32
January, 1947	35,160	119,432	29.44
February	35,409	102,527	34.54
March	35,204	118,783	33.74
April	40,567	113,685	35.68
Total	294,952	971,762	Avg. 30.35%

TABLE III
Total LP Ranges Produced in 9-Month Period

	Units	Per Cent of Total	Factory Sales Value	Per Cent of Total
Standard LP	294,952	81.56%	$22,208,568	85.03%
Apartment Type LP	53,945	14.92	2,118,557	8.11
Combination LP	12,757	3.52	1,792,390	6.86
Total LP	361,654	100.00%	$26,119,515	100.00%

Chart 1

STANDARD LIQUID PETROLEUM GAS RANGES

Monthly Data on Unfilled Orders, Production, Inventory

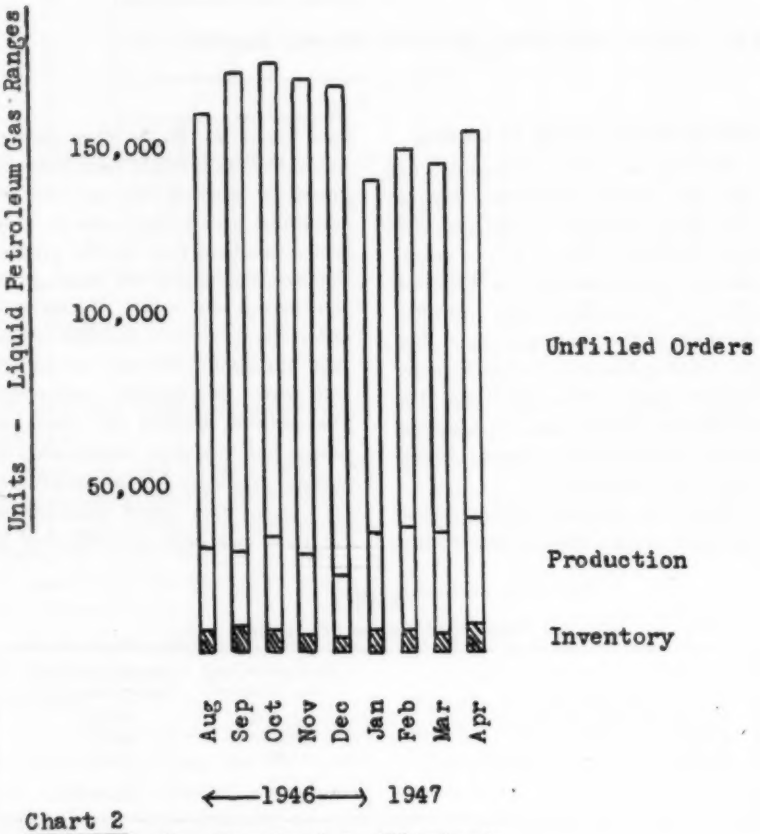
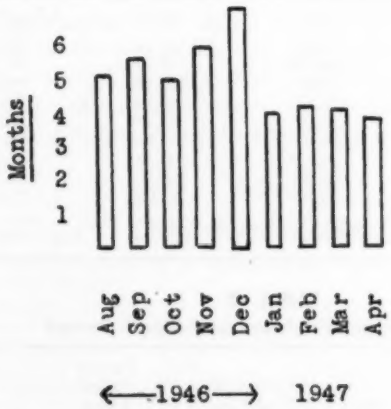


Chart 2

Months Required to Eliminate Backlog at Current Production Rate



These charts illustrate the production of standard liquid petroleum gas ranges in relation to the backlog. Chart 1 shows the monthly data on unfilled orders, production and inventory. Chart 2 tells the months required to eliminate the backlog at current production rate.

the backlog since the first of the year. April data shows the backlog increasing slightly.

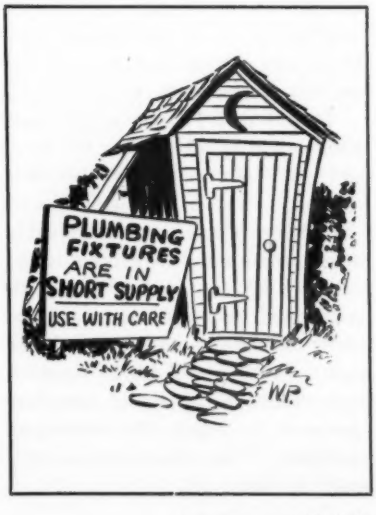
While it is too early yet to anticipate the eventual relative position of LP ranges as a part of the total range picture, this analysis shows what the situation is presently. Analysts will continue to watch, similarly, the relation between production and unfilled orders and the index of months required to eliminate the backlog at the current production rate. Projections, as new monthly data becomes available, and inventory reports from a representative sample of dealers will permit forecasting the end of the seller's market and prevent the consequent accumulation of heavy inventories.

Editor's Note:

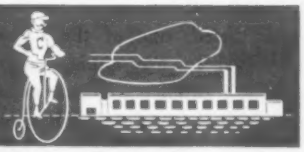
One of the "hot" subjects that has been getting careful and complete consideration by gas appliance manufacturers is LP-gas. As a matter of fact, many of the producers are going "all out" to get their share of the present and prospective business in this field.

LP-gas has been discussed at recent meetings covering competitive fuels and is, in general, getting the spotlight.

Davee, Koehnlein & Keating, business analysts, were requested to prepare for *finish* a concise report on current production of LP-ranges and to show a comparison with other range sales. This report offers an unbiased picture of production and may serve to some extent as an indication of production trends.



QUICK TRIPS TO ENAMELING PLANTS



A visit to Gaffers & Sattler Company

By GILBERT C. CLOSE

Roy Hastings and "Sandy" Remine were photographed at the plant entrance.

WE dropped in at the East Los Angeles plant of Gaffers & Sattler Company the other day to see Roy Hastings, the enameling superintendent whom we know as an enthusiastic member of the Pacific Coast Enamelers Club. The plant is an unbroken one-story building three blocks long—just a bit over 1200 feet, Roy told me later.

We found Roy busy at an inspection table. But being a fellow of kind heart, and with sympathy for others who are interested in porcelain enameling operations, he agreed to lay aside his work long enough to show us around and do a bit of talking.

A self sufficient plant

Gaffers & Sattler Company was established as a gas range manufacturing concern in 1922, but jobbed out all of their enameling work for the first thirteen years of their existence. In 1935, they purchased an adjacent building, remodeled it, and started their own enameling department. Today they are completely independent of all except raw material sources. They operate their own foundry, sheet metal shop, paint shop, and enameling facilities.

A division of Utility Corporation, Los Angeles, the plant is under the managership of William Couzens. Couzens has instigated a unique system of plant control in that there is no general superintendent but a superintendent of each production division, responsible directly to himself. Weekly meetings of the various division heads thresh out interdepartmental problems and correlate the production picture.

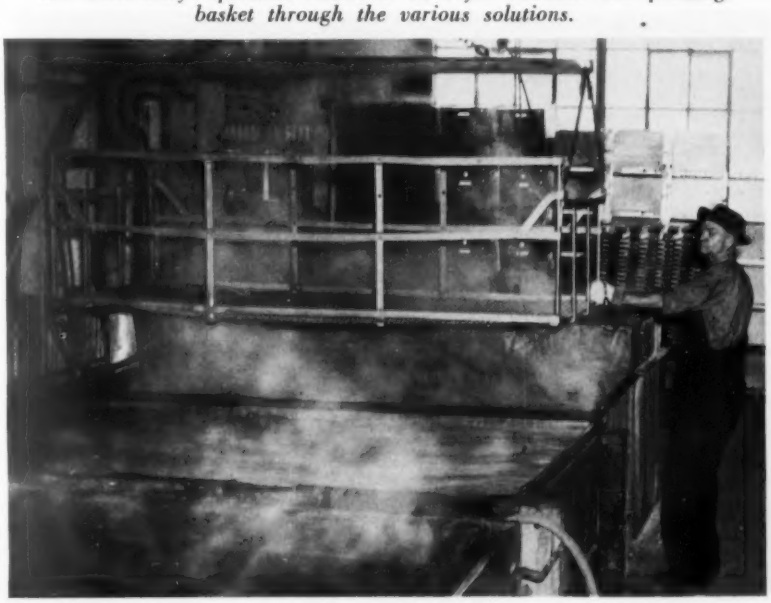
Hastings himself, starting as night superintendent, has been with the company ever since the enameling department was opened. Prior to that time, and since 1927, he was engaged in enameling work for the Elite Porcelain Co., Bellville, Illinois, a company no longer in existence. "Sandy" Remine, trained by Hastings and with 12 years of experience behind him, assists Roy with his present job.

The company produces a single product only—gas ranges—and all tooling is designed and utilized to this end. No jobbing work of any type is accepted. Current production schedules are heavy, and would be heavier if steel were more available.

Plant safety stressed

One of the first things we noticed about the enameling department was its general cleanliness and the complete absence of fire hazards or objects that might cause personal in-

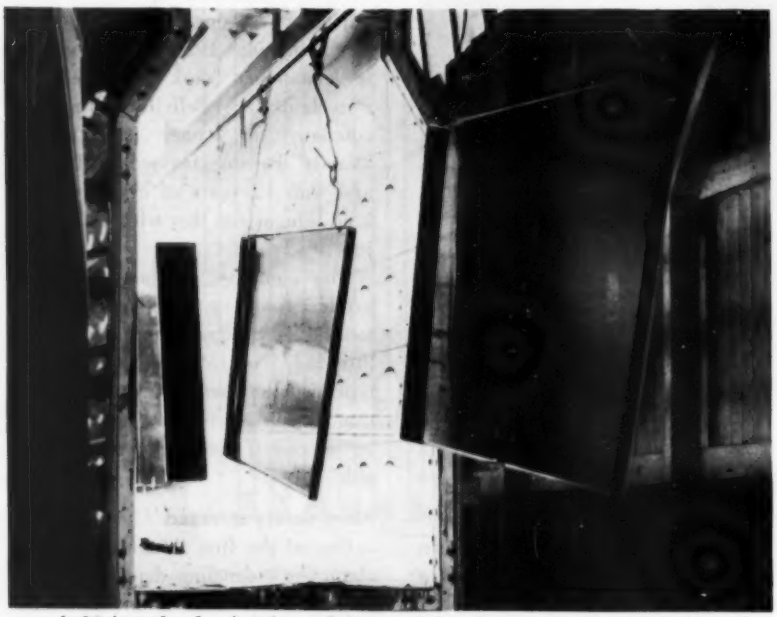
An electrically operated monorail conveyor handles the pickling basket through the various solutions.



jury. Roy explained this situation. "Each month a safety committee is selected from among the employees. This committee makes the rounds of the entire plant, checking all danger factors and talking with each employee. All complaints regarding working conditions get a friendly ear and are referred immediately to the management for action."

Burning is accomplished in three conventional box-type furnaces. Though natural gas is the fuel generally used, one of the furnaces is modified to use either gas or oil. Pickling room equipment consists of six 4 by 8 ft. tanks, each 4 ft. deep, including two cleaner tanks, one cleaner rinse, one acid, one acid rinse, and a neutralizing tank. An electric monorail conveyor handles the cleaning baskets through the pickling operations.

Six ball mills are employed for frit preparation. These include one 1000 lb. mill, two 500 lb. mills, and three 150 lb. mills. A conveyor from the ground coat dip tank passes through a gas-fired drier, thence to a convenient location near the furnaces. Overhead conveyor systems have not been installed as yet, but Hastings looks forward to the day when they will be.



A 30-foot bank of infra-red lamps dries the gas range parts which are finished with black japan.

Clean working conditions are aided by air-evacuated brushing tables.

Automatic spray for cover coats

A recently installed automatic spray booth is used for finish-coating flat work. This new piece of equipment eliminates considerable handling, and is much faster and more consistent than hand coating methods. Three spray nozzles travel back and forth across the work as it is transported through the booth on a continuously moving conveyor. Though the overspray is considerable, it is re-usable and does not constitute a serious problem.

The enameling department was closed down during the war, and the company diverted its sheet metal facilities and foundry to all-out war production. Various aircraft parts, shell casings, 5 gallon Jeep cans, and gasoline operated motor-generator sets were among the products produced. Another product, rather unique, was a fire extinguisher equipped with an enameled sheet iron barrel and plunger shaft.

By the time we had completed the plant tour, we had the impression that Gaffers & Sattler would be a good place to work. The plant is well lighted and roomy, and personnel advantages are not overlooked. After ninety days of service, each employee is eligible to an insurance policy covering life and sickness benefits for himself and hospitalization for his entire family.

Before we left, we learned that Roy Hastings has interests in life aside from enameling. He's an ardent fisherman, and follows the game trails during hunting season. One of these trails ended in disaster when he reached into a hollow stump to pull out a rabbit, and pulled out instead . . . . a skunk! We believe we noticed Roy's nose twitching slightly while he told us that one.

Don Graf is an authority on technical subjects pertaining to building. He was graduated in architecture from the University of Minnesota and with a graduate degree from Harvard Architectural School. Graf has engaged in active achitectural practice in the Middle West, Florida, New England, and New York.

The first complete survey of construction methods for the erection of porcelain enamel steel panels was carried out by him for inclusion in the standard architectural reference book, the "Don Graf Data Sheets." He also has acted as consultant on design, promotion, and advertising of building products for many of the country's leading manufacturers.

At present he is Building Editor of one of the leading American consumer magazines. This article was written especially for *finish* to outline architectural buying habits.

Easy marketing

there are more than enough uses for porcelain enamel to absorb all the industry can produce

By Don Graf • B. S., M. ARCH.

Exclusive feature finish

Porcelain Enamel, it has been said by one well-known in the industry, "has *innumerable* uses in construction."—And indeed it has! But so have brick, glass, cement, asphalt, wood, metal, and anything else you can think of—be it animal, vegetable, or mineral.

The problem of profitable operation is not in *how many* uses can be found. Rather it is in the answer to the question of *which will produce the greatest volume of business at the lowest sales cost.* This aspect of marketing building products is frequently misunderstood. As a result, the Past is littered with the skeletons of perfectly sound materials that died from being forced into an unnatural market. Out of respect for the dear departed, it is well to avoid identifying them. One anonymous case in point, however, might be worth recounting. Back in middle 1920's there was a product which we will call "Yummyboard." Yummyboard was a good building product for certain uses, and satisfied in every way a real need in construction. It was light in weight, it was fairly priced, it was easy to install, and had other virtues. But the manufacturer wasn't happy—he was unaware of the old stock-market saw that "bulls make money sometimes, bears make money sometimes, but the pigs never!"

He was by way of being a pig. So he set his "market research" department to studying "extra" uses. The first thing that the building fraternity knew, "Yummyboard" was suggested in advertising, promotion, and selling, as a breakfast food, a toothpaste, something you could use to shine your shoes. In fact, it had everything, but *everything.*

Yummyboard was practically laughed out of the buiding industry, until someone saw what was the matter. Then this company began to sell the product for uses that were reasonable and legitimate. Today this product is one of the biggest sellers in a highly competitive field. The manufacturer cannot begin to meet the demand for its primary function in building, and that is that it is a hell of a good building board!

Many such lessons to the circumspect could be cited.

One of the seven lamps of architecture

Some ninety years ago, Charles Ruskin jotted down a few thousand words under the title, "The Seven Lamps of Architecture." One of the *seven lamps* was Honesty. Honesty in the use of materials. Ruskin allowed as how a building material should be used for what it was, and not in imitation of some other material. No one has ever been able to prove him wrong on this particular point, in spite of a lot of other theories he propounded which were unbelievable nonsense.

A glance back through the five thousand years of recorded architectural history will reveal no example of a building product getting anywhere if used in imitation of another.

Ever hear of scagliola? It looks like marble—but it isn't. It's made of plaster and is cheaper, but it lacks

Modern and dignified are the free standing letters on the face of the world's first all porcelain enamel school building in Gerardville, Pa. The completely functional handling of the material is indicated here in the louvered panel which is a part of the ventilating system.

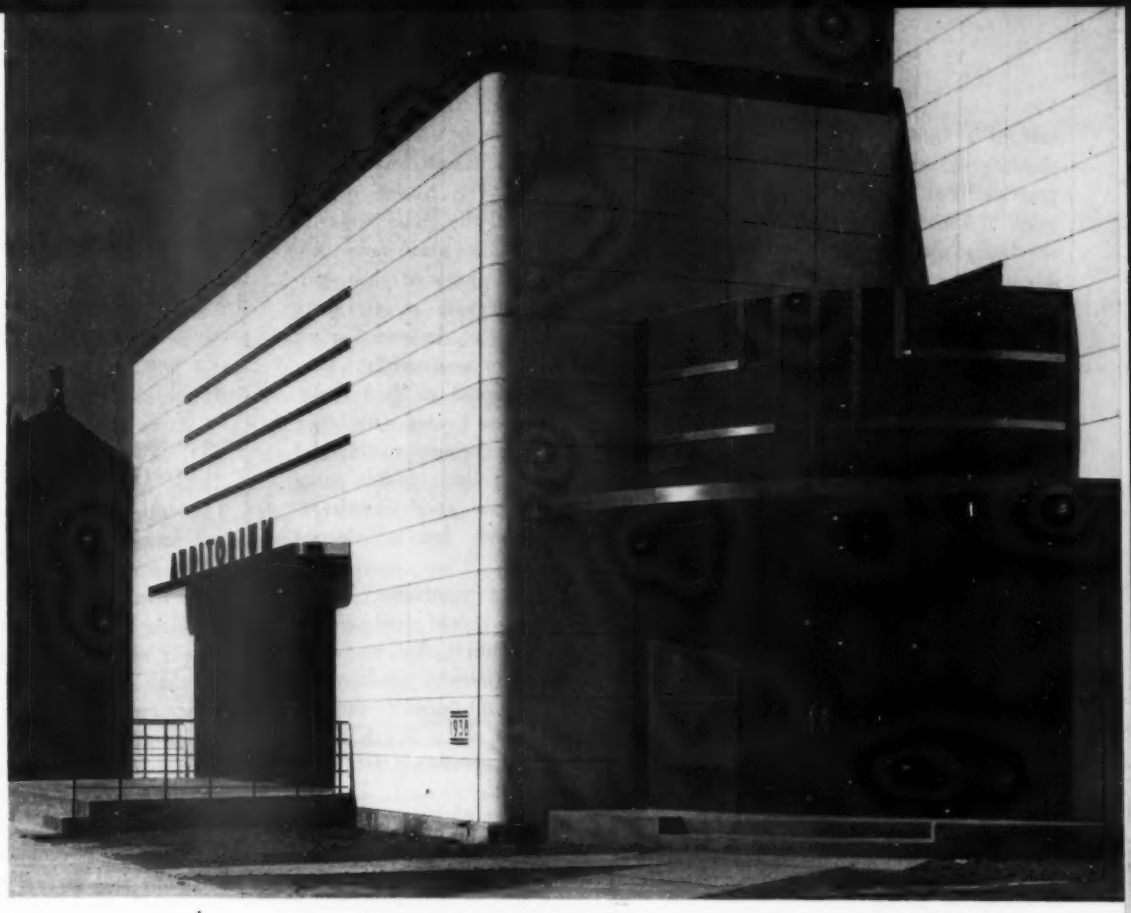
A corner of the porch of the Lustron mass produced and factory prebuilt home shows a frank and architecturally honest use of porcelain enamel as a building material. The panels have been used frankly, and as a result the aesthetic effect is entirely pleasing.

HEDRICH-BLESSING STUDIO

the conviction of being marble. As a result, the scagliola business does not present any exciting profit possibilities in the building material field, and never did!

Ever hear of imitation Travertine? It was supposed to fool you into thinking it was a beautiful volcanic marble imported from Italy. It wasn't and no one who saw it thought it was. You sawed it and nailed it in place. It was ¾" thick. It had a beautiful texture, was fireproof, and had many virtues if it had been used properly in architecture. But it was sold as an imitation of stone, and it was not stone. You will have to look a long time today to find any of this product.

Ever hear of terra cotta? Here was an exterior facing material that had all the performance and design characteristics that any building product could want. But one of the things that killed it was that it was laid up like stone, not like terra cotta. In the firing of the clay, this material warped. So the only way its natural property could be handled in design was to give it an all-over surface design. The Italians knew this and some of the most beautiful buildings in the world are found in



Grootenboer and Knobloch, architects for the Gerardville school, have used the material honestly for what it is, and have fully exploited its versatility in their design. Note particularly the combination of white metal and the dark blue trim with the clean white wall surfaces.

Renaissance Italy, faced with terra cotta having a raised, all-over surface pattern. The Hamm Building in St. Paul, Minnesota, is a fine modern example of terra cotta handled properly. But it took time to make the sculptured molds for casting the clay, and terra cotta began to be sold as a flat-surfaced imitation stone. Terra cotta has been little used for many years as an exterior facing material.

Stainless steel tiles?

Ever hear of stainless steel tiles? Some years back a process for making stainless steel into very thin 6″x6″ tiles was developed by an American manufacturer. Now *tile* means a relatively small unit set individually with a narrow joint. Baked clay, or ceramic tiles, could not be made in large units for they would warp and crack in the firing. The tiles also take on minute difference in color and surface so that there are never two precisely alike. Together with the jointing, these *inherent characteristics* of the material and its technique of installation re-

The panels for the Lustron homes are attached by a simple edge interlock applied to a framework of especially designed steel members which are erected as panels 8′ x 8′. Specially developed resilient plastic gaskets assure a water-tight, weather-tight joint. The exterior panels are integrately insulated.

sult in a wall that is aesthetically pleasing in texture and practical in function. But the inherent characteristics of stainless steel are that it is absolutely uniform in surface, that it can be made in large unbroken panels *sans* joints, and with no color variation. Why then not use it that way—the natural way—to take advantage of its own unique properties? Why cut it up into little squares, making its installation more expensive and impairing the sanitary aspects of the wall with useless joints? So stainless steel tiles died aborning when offered on the market!

Imitation may be the sincerest flattery in some phases of life, but it is the quickest road to oblivion for building materials!

Like the stud book says, "Design by Skill out of Materials." What are the properties of Porcelain Enamelled Steel that will enable the designer to exercise his skill in producing fine uses for it?

A lesson in glass

Porcelain can be made in relatively large unbroken areas. There is an excellent lesson in the development of glass and plywood and wallboards that the porcelain manufacturers might ponder. Take glass. In medieval times it was impossible to make any but very small panes. So the diamond-leaded windows persisted until the late 1700's—not because designers wanted people to strain their scenery through a grillwork of lead canes, but because they couldn't get any more functionally large panes of glass. Then the technique improved to a point where glass could be made in areas as large as 10″x12″. The Colonial and English architects immediately took advantage of this new addition to their materials *palette* and we had the 6 and 8-light sash of the 1800's. But glass marched on. It came to pass that plate glass could be made as large as 12 ft. by 20 ft. It was not used in houses—only in store windows. This was because of another factor, that of frosting and heat loss. Because you look *in* a show window, and *out* of a living room window the store owner could control these problems with fans, cold window spaces using closed show-window-backs. The home owner could not. But the glass industry then produced large glass panes consisting of TWO pieces of glass, hermetically sealed, with an air space between. American designers seized upon this development avidly. They used this functional product development to give us houses with large, unbroken picture windows and solar heating—because these double panes don't frost, are good insulators against heat loss, can be cleaned easily.

Design means products. If the Colonial builders had had double glass, it is a certainty that we would never have had muntin windows. If they had had built-up roofs such as those that cover every city business building in the country, flat roofs on houses would not now be a novelty. If they had had plywood, we would have seen fewer examples of "paneling."

The architectural market for Porcelain will depend in part on how satisfactorily the designers demand for larger and larger unbroken areas of porcelain can be answered. They will make no demands beyond practical limits, and economic limits. But they will always press, as they have pressed throughout all history, for greater versatility in the materials with which they create buildings.

The trend toward function

The whole trend in modern design is toward function. One of the enemies of function is joints. It wasn't so long ago that designers marvelled at pieces of plywood 4 ft. wide by 12 ft. long. Then a manufacturer came along with single, unbroken sheets of plywood that would finish the entire side of a room 20 ft. long and 8 ft. high! *Designers are going to demand integral counter tops and splash backs for kitchens that are continuous.* They are going to want bathroom wainscot pieces that have no joints or moldings. They are going to ask for exterior wall panels that look like what they are — large areas of porcelain enamelled steel. They won't want imitations of wood siding, shingles, or shutters — and if the past is any criterion, they won't buy them — in any large quantity.

There are supposedly five reasons why a man should drink according to an old poem and likewise there are five reasons for utilizing a building product. These are: 1) function; 2) appearance; 3) installability; 4) cost; 5) service.

Unique characteristics favorable to porcelain enamel

The unique characteristics of porcelain enamel are found in no other building product. It seems useless to recount them here but the combination is so important to the use of porcelain enamel as a building material that a brief resume of their influence on architectural design may be worth-while.

Lightness in weight brings to mind a statement that Henry Ford made in his book over twenty years ago, to the effect that weight is the prime enemy of progress. Thousands of bricks weighing 7½ pounds each are presently erected to conduct the smoke from a 30″ fireplace. Tons of water have to be piped or carried on a construction operation for masonry and plaster.

The lightness of weight of porcelain enamel panels means savings in structural framing, lower transportation and warehouse cost, lower handling and erection charges.

The sanitary characteristic is an important property, suggesting its use wherever food is manufactured or prepared, or where contagion is a problem, or where moisture must be withstood.

Its noncombustibility makes it an important protection against fires originating inside or outside the building. There is an unlimited color range which makes the material suitable for any use from the most dignified to the most frivolous and showy. Experiments with texture and matt surfaces can still further enlarge the already huge potential market for porcelain enamel.

Installation methods have been somewhat confusing to the designer, architect, and engineer. Something

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The Washington round-up

By Wilfrid Redmond

CONTROLS over all types of construction, except structures to be used for amusement, recreation or entertainment purposes, were terminated July 1, as a result of the new Housing and Rent Act of 1947.

Industrial or commercial construction may be undertaken without a permit. Shortages of materials may, however, hold up industrial projects. Many industries are not excited about the end of controls on industrial construction, and report they will wait for a break in the price of building materials.

Restricted use of tin and antimony oxides until March 1, 1948, is indicated in legislation passed by the Senate and House. The agreement upon the date was reached in a conference of the two houses of Congress. The Senate had passed a bill extending the Title III controls of the Second War Powers Act until June 30, 1948. The expiration date recommended by the House was January 31, 1948.

The Senate failed to extend the Second War Powers Act before June 30, so a resolution granting a temporary extension to July 15, 1947, was passed by both Senate and House and signed by the President. Senator Taft told the Senate that a few days without any controls over tin and antimony wouldn't do any harm, but Senator Cooper, of Kentucky, sponsor of the Senate bill, disagreed with him. Senator Cooper pointed out that disastrous disturbances in the market for these short materials would occur during any hiatus in control.

Antimony and tin controls

The Secretary of Commerce now has full responsibility for controls over tin and antimony, and is required to make quarterly reports to the President and Congress on the supply situations of these metals and detailed accounts of allocation and priority procedures.

In hearings on Senate and House bills to continue controls on tin and antimony, Government witnesses reported that the tin supply situation has deteriorated to a marked degree since last March, and that a shortage running well into 1949 is now indicated. The witnesses from the Office of Materials Distribution of the Department of Commerce told the committees that the supply of tin for the next fiscal year will be somewhere between 60,000 and 65,000 tons and restricted demand around 90,000 tons. If controls are removed, unrestricted demand, they estimated, would soar to 121,000 tons.

The OMD said that if controls are extended, the present restricted use level can be maintained during the current fiscal year.

The supply position of antimony has also worsened since last March, when controls were extended by Congress for three months. The new supply for the fiscal year 1948 is estimated at 31,500 tons as compared with 34,500 tons for the calendar year 1947, reported by CPA last March. Demand is now at 39,000 tons per year.

Ralph McGean suggests removal of end use controls

Nearly all industry witnesses before the Senate and House Judiciary Committees agreed with the Government view of a continued need for controls over tin and antimony. One of the exceptions was Ralph McGean, vice president of the McGean Chemical Co., Cleveland, Ohio, who told the House committee that his firm has a potential business amounting to 30,000 pounds of tin oxide a month, but is getting only 15,000 pounds. He recommended removal of end use controls on tin, which would permit each user to buy according to his needs.

McGean said he had reason to believe that the amount of tin allocated by the tin branch of the Office of Materials Distribution, to be converted into oxide by each manufacturer, is an arbitrary amount having no bearing on any previous history.

Steel shortage investigations

Big steel industrialists, appearing before the Senate Small Business Subcommittee investigating the current steel shortage, have estimated that by the end of 1947 ample steel will be available to satisfy the needs of the country.

Wilfred Sykes, president of the Inland Steel Co., told the committee that the present tight supply situation may be attributed to the following factors:

1. Many mills are changing over from heavy to light rolled products.
2. The industry is filling pipelines and meeting pentup needs.
3. Consumers are suffering from exaggerated estimates of the inventories they require.

The big steel industrialists have been inclined to minimize the importance of the black market in steel which the committee has been emphasizing in its inquiry.

The hearings which have been conducted for over a month now have brought forward a long line of witnesses — mainly manufacturers of stoves, heaters, refrigerators and other household equipment — who complain that they are unable to get any steel at market prices but plenty of steel at black market prices of $250 a ton.

Evidence so far accumulated indicates that historical consumers are reselling some of their steel, and that conversion deals, where a mill receives pig iron in exchange for steel, or scrap for steel, release a certain amount of steel into the black market.

So far the committee has done no more than hold prolonged hearings and has a new series of investigations scheduled.

Senator Murray, of Montana, who was chairman of the Senate Small Business Committee for five years until the Republicans came, has moved to beat the Steel Subcommittee to a solution of the steel shortage problem by getting the Presi-

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(3) MAKE SPECIAL CHEMICAL ANALYSES of atmospheric conditions in other parts of the plant. Recommend new pickling procedures and solutions, and control systems, for better cleaning of your ware.

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Furniture market observations

A new type of market faced the reporter who visited the American Furniture Mart and the Merchandise Mart during the summer market period, July 7-19. The mad rush of preceding markets was conspicuous by its absence, and in its place was an orderly procession of buyers intent on "studying" the offerings of the furniture manufacturers and producers of major appliances and household equipment.

It seemed more than obvious that store owners and buyers are no longer interested in buying just anything because it is offered for sale. Prices, for the most part, were at least equal to those offered at the January markets, but there is increased attention to quality and a very marked increase in the return to "selling" on the part of manufacturers.

Experts expect continued good market

Publication representatives were given a preview of the American Furniture Mart at a Press Club luncheon, at which the featured speaker was Leonard W. Stratton, home furnishings merchandise manager for Wieboldt Stores, Chicago. At the Merchandise Mart, press conferences were held daily with leading experts on the subjects of housewares, appliances, and furnishings present for consultation.

Mr. Stratton, in his talk, pointed to 6,000,000 war marriages and the "impending home building boom" as a source for a good many years of good home furnishings business.

"The first six months of this year saw the best volume that the factories and stores ever enjoyed," Stratton said. "Furniture production ran 29% over 1946; retail volume ran 15% over 1946. And 1946 was 89% better than 1939 for furniture manufacturers; — was 157% better than 1939 for home furnishings retailers.

"Will it continue?", Stratton asked. And then answered by saying, "We are on a high plateau, and it looks as though we may stay there. The six million war marriages and the impending home building boom indicate that home furnishings will have many good years ahead, better than most industries in fact. That is one man's viewpoint, but I'm sure that in general it is the industry's feeling, too."

Looking in on porcelain enameled products

A visit to the display rooms of the many porcelain enameled product manufacturers gave us a definite "lift" when compared with markets immediately preceding. For instance, we have been crying during preceding markets about the trend to substitute materials for table tops—such as wood, plastics, linoleum, etc. This market shows a definite swing back to porcelain enameled tops and is definite proof of the statements made by furniture manufacturers during preceding markets—that it was the unavailability that was keeping porcelain enameled tops off their lines. The

to Page 54 →

Above: Crowd at the International Home Furnishings Market at the Merchandise Mart. Right: Section of one of the parking lots near the American Furniture Mart.

COMPLETE *Finishing* SYSTEMS

for ENAMEL • LACQUER • PAINT

At Right: Interior of Mahon Combination Spray Booth-Dryer Designed to Handle Railroad Coaches and Locomotives. Note Electrically Operated Scaffold-Elevators on Either Side (these may be adjusted up or down by the workmen at will from any position on the scaffold). Note, also, the Filtered Air Diffusers in the Upper Foreground. Above: The Suction-Exhaust Fans Located Directly Above the Hydro-Filter Units in the Rear of the Combination Spray Booth-Dryer.

Top View Showing the Two Combination Spray Booth-Dryers with Heating Ducts, Filtered Air Supply Units, and Operating Mechanism for Scaffold-Elevators.

Mahon Hydro-Filter Units on Either Side at Rear End of Combination Spray Booth-Dryers. These Remove Overspray from the Air Before It Enters Exhaust Fans.

Box Cars, Coaches, Buses and Trailers

Here is a typical Mahon Finishing System designed to meet railroad requirements in shops where repainting of rolling stock constitutes a major operation. This system consists of two combination Spray Booth-Dryers (one is illustrated above), and a Filtered Air Supply Unit. The two Spray Booth-Dryers are installed on parallel, adjacent tracks inside the shops, and may be operated simultaneously or individually as desired. This installation is another excellent example of the thoroughness of Mahon planning and engineering to meet specific requirements under any conditions. Twenty-seven years of pioneering and constant research in this highly specialized field have endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere. See Mahon Insert in Sweet's Mechanical Industries File.

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MAHON

NEWS

Visitor from California

A recent visitor in the *finish* offices was Clarence R. Graham, president of James Graham Manufacturing Co., Newark, California.

The Graham company represents one of the oldest porcelain enameling facilities on the West Coast. The original plant utilized a coal-fired box type furnace. At that time all enameling was on cast iron. The company has progressed with the porcelain enameling industry, and now operates a modern continuous furnace and is in the throes of building a new and larger continuous unit.

Pennsalt advances Duffy

Appointment of Joseph J. Duffy, Jr., as manager of sales of the Special Chemicals Division of the Pennsylvania Salt Manufacturing Company has been announced by George B. Beitzel, vice president in charge of sales.

Mr. Duffy, formerly assistant manager of sales in the division since February, 1945, assumes the position formerly held by William P. Drake, recently appointed assistant vice president.

Norge employs video

Employing a technique which literally took the listening-view audience behind the scenes, the Norge division of Borg-Warner Corp. entered the commercial television field with a "live" show on June 3, for regularly scheduled video programs in Detroit. The program was broadcast from WWJ-TV, the Detroit News station.

Oliver to Servel

Evan M. Oliver has joined the engineering department of Servel, Inc., as ceramic engineer, it was announced recently. He succeeds Sheldon Lloyd who resigned.

Oliver recently had been associated with the Chicago Vitreous Enamel Product Company of Cicero, Illinois, as ceramic engineer in their research laboratory. He is a veteran of World War II, serving four years with the Air Force as a weather forecaster.

Louisiana and Texas outdoor advertising men visit Texlite plant

During their recent convention in Dallas, Texas, members of the Outdoor Advertising Associations of Oklahoma and Texas toured the plant of Texlite, Inc., as guests of Harold Wineburgh, president of the Texas concern. The advertising men witnessed the fabrication and porcelain enameling of panel trim, and the enameling of imprints and sign faces in the large plant.

G.E. executive announcements

Responsibility for General Electric Company policy pertaining to employee relations has been assigned to L. R. Boulware, a vice president of the company, it was announced by Charles E. Wilson, G. E. president.

E. D. Spicer, vice president formerly charged with this responsibility in the organization, will henceforth be in charge of the company's manufacturing policy, continuing as a member of the president's staff.

Boulware previously had been in charge of operations of the nine manufacturing affiliates of G. E. Prior to his association with the company, he had been general sales manager of Easy Washing Machine Co., and vice president and general manager of the Carrier Corp.

New officers for A. C. S. Pittsburgh section

New officers for the Pittsburgh Section, American Ceramic Society, who took office July 1, are: J. S. Nordyke, Eagle Picher Co., Pittsburgh, Pa., chairman; C. M. Lambe, Jr., U. S. Gypsum Co., Pittsburgh, Pa., vice chairman; F. L. Bishop, Jr., American Window Glass Co., Arnold, Pa., secretary; L. A. Smith, Jones & Laughlin Steel Co., Aliquippa, Pa., treasurer, and Theodore Lenchner, Vitro Manufacturing Co., Pittsburgh, Pa., councillor.

It is reported that John McKee is no longer connected with The O. Hommel Company, Pittsburgh, where he has been associated as vice president in charge of porcelain enamel sales. Prior to his Pittsburgh connection, McKee was with Norge Division, Borg-Warner, for 15 years

in the sales and purchasing departments.

At press date, his future plans had not been announced.

New Mullins vice president

Frank M. Beauregard has been elected a vice president of Mullins Manufacturing Corporation, in charge of operations, it has been announced by George E. Whitlock, president of the firm.

Beauregard has been operating manager of Mullins' plants in Salem and Warren, Ohio, since January, 1946. He will continue to direct the company's manufacturing activities.

Honeywell announces Mexican subsidiary

Minneapolis-Honeywell Regulator Company has formed a subsidiary company in Mexico, Harold W. Sweatt, president, has announced.

Marking the sixth foreign subsidiary organized by Honeywell, the new firm has been named Honeywell-Brown, S. A. All legal formalities have been completed, Sweatt said, and personnel engaged. Headquarters of the new company have been established in Mexico City.

Enviable safety record

One of the best safety records in years among heavy industrial organizations was disclosed in a National Safety Council report which stated that 12 plants of Carnegie-Illinois Steel Corporation, U. S. Steel subsidiary, had operated without a single lost-time accident over a combined period of 25 million manhours of working time.

Employing 80,000 persons, six plants in the Pittsburgh area, three in the Youngstown district and three in the Chicago district piled up the record which represents an average of more than two million manhours each without lost time due to accidental injury.

R. H. Reeder, associated with the Duo-Therm Division of Motor Wheel Corp., Lansing, Michigan, for the past 10 years, has been named Duo-Therm sales manager by Motor Wheel's executive vice-president, M. F. Cotes.

PEI to sponsor Sales and Management Conference

A committee has been appointed, and plans are already under way, for the development of a potent Sales and Management Conference for the first full day of the two-day Annual Porcelain Enamel Institute Meeting, October 9 and 10, in Cleveland, Ohio.

The participation in the Conference by management and sales management of all companies interested in porcelain enamel or its use is to be encouraged, and it is expected that the program will be jampacked with useful information for all those responsible for selling porcelain enameled products. The attendance at the sessions will definitely *not* be confined to P.E.I. membership, but is to include everyone who might be interested.

Sales and Management Conference Committee

Chairman: F. L. Meacham, Chicago Vitreous Enamel Product Co.
Richard H. Turk, Pemco Corporation
W. A. Barrows, Barrows Porcelain Enamel Company
B. F. Birdwell, Industrial Enameling, Inc.
Dana Chase, Dana Chase Publications
C. D. Clawson, Ferro Enamel Corporation
R. H. Coin, Ingram-Richardson Mfg. Co. of Indiana
B. Dyer, Vitreous Steel Products Company
J. A. Holcomb, Wolverine Porcelain Enameling Co.
E. M. Hommel, The O. Hommel Company
R. J. Ritchey, Carnegie-Illinois Steel Corporation
M. J. Salton, Seaporcel Porcelain Metals, Inc.
Edward Mackasek, Porcelain Enamel Institute

Chairman Meacham

A meeting of the Sales and Management Conference Committee was held at the Netherland Plaza Hotel, Cincinnati, on June 27 to develop a complete program designed to be both interesting and a definite sales help to executives who will be responsible for increased business as the industry enters the expected trend to a buyer's market.

Nationally known speakers will be scheduled for keynote and luncheon addresses. Specialists in the sale of the major classes of products using porcelain enamel will be on the program with informative talks and dis-

cussions, and a demonstration of selling aids will be presented.

Plant manager of French enamel works visiting in the States

Word comes to *finish* from Dr. Paul A. Huppert, of Lisk Manufacturing Company, that E. Villaz, plant manager of the Enamel Works in Lafeschotte (Doubs) of the Establissements Japy Freres, Paris, France, is now in this country for the purpose of visiting porcelain enameling plants and exchanging views with men of the industry.

Dr. Huppert was at one time Directeur des Emailleries for the company which Mr. Villaz represents.

Nadherny to Barnes & Reinecke

Barnes & Reinecke, Inc., designers and engineers at 230 E. Ohio St., Chicago, announce the appointment of Russell J. Nadherny as chief engineer. Nadherny formerly was vice president in charge of engineering for Athey Products Corporation and, earlier, was chief engineer for Mercury Manufacturing Company. He is a mechanical engineering graduate of Cornell University.

T. L. Pantz to Seeger

T. L. Pantz has been appointed assistant to John W. Krueger, newly appointed vice president and general manager of the Evansville Division of Seeger Refrigerator Company *(see page 41, July, finish)*, according to a recent company announcement. Both Krueger and Pantz formerly were associated with Frigidare, Dayton, Ohio.

Another Seeger announcement states that John S. Holl, who has been in charge of the Evansville plant since Arthur J. Lowell left last spring to take a position with Sears Roebuck and Company, will return to the Saint Paul plant in his old capacity of general manager.

Sharp is Tappan sales manager

According to a recent announcement by A. B. Ritzenthaler, vice president in charge of sales, Tappan Stove Company, D. S. Sharp has been promoted to the position of sales manager for the firm. Announcement was made at a meeting attended by representatives and district managers throughout the United States, Canada and Mexico.

A native Mansfielder, Sharp was graduated from Mansfield Senior High School and Ohio University before joining the Tappan organization in 1936.

D. S. Sharp is shown here with three other Ohio University men while attending a football game at their Alma Mater. They are, left to right: S. F. Wolfe, Firestone Tire & Rubber Co.; D. S. Sharp, Tappan Stove Company's new sales manager; C. G. Hamilton, Hamilton Insurance Co.; and R. A. Sams, also of Tappan.

No escalator clause

Brown Instrument Company, Philadelphia, will continue to operate on a firm price basis in the sale of all its products, according to L. M. Morley, vice president and general sales manager of the company.

According to Morley, the escalator clause on all equipment was eliminated to assist in the correction of uncertainties which tend to unbalance the cost and price situation.

Gibson plans new range plant

It is reported that the Gibson Refrigerator Co., Greenville, Michigan, is planning to build a new porcelain enameling plant at nearby Belding as a start of the firm's electric range plant.

Office of Housing Expediter at Grand Rapids has approved the company's application to erect the plant.

ACS Central Ohio section summer meeting

Frank H. McRitchie, secretary of the Central Ohio Section of the American Ceramic Society, reports a successful summer meeting was

to Page 44 →

Now—Frigidaire gives you

the all-porcelain automatic washer

Here is a new porcelain enameled appliance which may well start a trend in the field of automatic electric clothes washers. This table-high washer has a top that can be used, and used constantly, as a work surface. In fact, the whole exterior, because of its lifetime porcelain enamel finish, will keep its newness for years, whether installed in kitchen, laundry room or basement. Interior tubs and other important parts are likewise protected with lifetime porcelain enamel.

(See story on page 44.)

Accepted!

—AND SO WILL BE YOUR ENAMELING JOBS DONE WITH

PORCELFRIT

—THE FRIT OF FEWER REJECTS

● Every enameling plant faces the problem of reducing rejects. You can't completely eliminate them, even by using PORCELFRIT . . . but with PORCELFRIT you can cut rejects to a point you've never believed possible.

That's because PORCELFRIT is the result of both experiment and experience . . . experiment in a completely equipped laboratory, and experience under "old man practical" job enameling conditions.

The "bugs" are worked out before you get your PORCELFRIT.

Just making claims isn't enough. With absolutely no obligation to you, we'll gladly send an ING-RICH ceramic engineer to work with you . . . and *prove* that PORCELFRIT will cut your rejects. Isn't that fair enough? Just let us know, and an expert will be on his way to you.

ING-RICH
PORCELFRIT
"The Plant Tested Frit"

INGRAM-RICHARDSON MFG. CO., OF INDIANA, INC.

OFFICES, LABORATORY AND PLANT, FRANKFORT, INDIANA

→ *from Page 41*

held at the Zanesville Golf Club on June 20. A full day of activities was scheduled, including a plant trip, luncheon, afternoon golf or bridge, and dinner.

The new Frigidaire all-porcelain washer

Frigidaire Division of General Motors introduced a new line of home laundry equipment to the public early in July through its nation-wide dealer organization.

The new line includes a revolutionary new automatic electric clothes washer, said to have been in the process of development for nearly 10 years, together with an automatic electric dryer and electric ironer.

H. M. Kelley, the company's appliance sales manager, announced that the suggested retail price for the new washer has been established at $299.75. The dryer will sell for $229.75, and the ironer for $189.75. He indicated that the initial allocations of the new laundry equipment were scheduled to reach only a limited number of dealers at first. "Distribution will be expanded as production is accelerated," he declared, and added that "Quantity production of the washer is already underway in our Dayton plants, and the production rate is increasing daily."

F. M. Mitchell, the firm's home laundry sales manager, emphasized Frigidaire's experimentation and testing program. "Before the war, over a hundred test models were built," Mitchell disclosed. "To test them under various conditions, they were placed in homes of all types. These washers cleaned approximately one and one-half million pounds of clothes in more than a quarter of a million family washings before we were satified. In addition, the washer has been thoroughly studied and tested in our engineering laboratories and, from a woman's view point, by the Company's home economics department."

The new Frigidaire washer employs a new washing principle known as "Live-Water" action. A new type pulsator affords an up-and-down washing motion — 330 times each minute—creating currents of water that penetrate and flex the clothes. The new machine washes clothes, rinses them twice, spins them damp dry and cleans itself—all in less than 30 minutes.

All porcelain, inside and out, the new washer may be expected to have a definite effect on the housewife's demand for a *permanent* exterior on her automatic washer, one that will withstand constant use as a table top as well as the corrosive action of soaps and cleansers.

The mechanism is housed in a one-piece, welded steel cabinet which opens from the top. When closed, it can be used as additional table-top work space. A safety device automatically stops the spinning action when the lid is opened.

Staud elected president of Illuminating Engineering Society

Rudolf W. Staud will take office as the 43rd president of the Illuminating Engineering Society upon the expiration of retiring President G. K. Hardacre's term on October 1. The Illuminating Engineering Society is a national organization, founded in 1906, with over 5500 members, and sections and chapters in 34 cities in the United States and Canada. It is the recognized national forum for the presentation and discussion of technical papers on the science and art of illumination. The society prepares and sponsors standards and recommended practices for various fields of illumination and publishes technical reports, lighting data sheets and the "I.E.S. Lighting Handbook."

President-elect Staud, an executive of the Benjamin Electric Mfg. Co., Des Plaines, Ill., makers of lighting equipment, is a well-known figure in both the lighting industry and the porcelain enameling industry. For many years, he has been actively identified in the industry-wide activities relating to the improvement of practices and the development of higher uniform standards for lighting equipment. He has served the RLM Standards Institute (a national specification-certification activity in the industrial lighting equipment industry) as its president since 1936. He is a director of the Chicago Lighting Institute, and vice chairman of the 2nd International Lighting Exposition and Conference which is to be held next November 3-7 in Chicago. He is a past president of the Porcelain Enamel Institute. Among the offices he has held in the Illuminating Engineering Society are those of vice president, director, and chairman of numerous committees. In the National Electrical Manufacturers Association, he also has held numerous chairmanships and served on many committees.

New chief metallurgical engineer at Carnegie-Illinois Steel

Louis J. Rohl has been appointed chief metallurgical engineer of Carnegie-Illinois Steel Corporation, succeeding E. T. Barron, who is retiring after 42 years with this U.S. Steel subsidiary, it was announced by James E. Lose, vice president.

A native of Elgin, Ill., Rohl studied chemical engineering at Armour Institute of Technology and metallography at the Case School of Applied Science. He was first employed by Carnegie-Illinois at South Works, Chicago, Ill., in 1917.

He was advanced to manager of the Chicago district metallurgical

department in 1943, and last April became assistant chief metallurgical engineer with headquarters in Pittsburgh, Pa.

Washer-Ironer men meeting at Mackinac Island

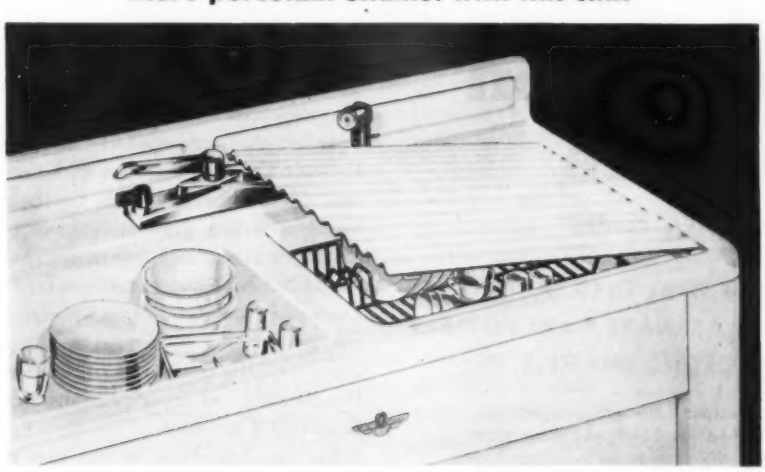
As this issue of *finish* goes to press the members of the American Washer and Ironer Manufacturers' Association, together with Associate members, will be meeting at the Grand Hotel, Mackinac Island, for their summer session.

The program for Monday, July 14, includes a general assembly, with Roy A. Bradt, vice chairman of The Maytag Company, as chairman; a luncheon; golf tournament; cocktail party and dinner.

On Tuesday, July 15, there will be a second general assembly session, to be followed by a special program sponsored by the Associates group. This program is to include a roundtable discussion covering the relationship between top management and purchasing which develops from the everyday functioning of business. This program will take the form of a skit, to be introduced by C. L. Huff, Bliss & Laughlin, Inc., chairman of the Associates group.

Taking part in the skit will be G. L. Meyer, vice president of Stewart-Warner Corp. and general manager of the Stewart Die Casting Div. and the Bassick Co., subsidiaries of Stewart-Warner, who will serve as moderator; Henry Mateer, publisher of "Electrical Merchandising," representing management in the role of works manager of the Black Washing Machine Co.; and Dana Chase, publisher of *finish*, who will take the part of purchasing agent for the White Washing Machine Co.

More porcelain enamel with this sink



Extra kitchen work surface is provided by the sliding drainboard on the 48" Youngstown double-bowl Kitchenaider. The porcelain enameled drainboard slides over either of the bowls, one of which is extra deep. It can be easily removed when dishes are to be washed, giving all the convenience of a twin-bowl sink. Then, too, the drainboard provides an excellent "cover up" when the housewife wants to leave the dinner dishes to catch an early movie or get the house cleaning done.

ASC Pittsburgh section fall outing

The Pittsburgh Section of the American Ceramic Society plans to open its 1947-48 season with a stag golf outing and dinner at the Nemicolin Country Club, Friday, September 19. The club is located 14 miles east of Washington, Pa., on Route 40.

For those who do not play golf, a plant visit has been arranged. Dinner will be served at 6:00 P.M. Reservations should be mailed to D. O. Evans, Corning Glass Works, Charleroi, Pa., by August 30.

Fluorescent fixtures supervisor

F. R. Archer has been named merchandising supervisor, Fluorescent Lighting Fixture Division, Sylvania Electric Products Inc., according to an announcement by Gordon S. Hughes, fixture merchandising manager.

In his new capacity, Archer, who has been with Sylvania Electric since 1940, will supervise merchandising and promotional activities for fluorescent fixtures manufactured by the company.

Washer sales continue climb

Despite difficulty in obtaining sheet steel and other essential supplies, the household washer manufacturing industry continues to pile up totals far in excess of its highest pre-war output. Nationwide sales reported for the first five months of 1947 amounted to 73 per cent of all sales for 1941, record pre-war year, and 70 per cent of sales for 1946, first full post-war production year, according to figures made public by the American Washer and Ironer Manufacturers' Association.

Washer sales by the Industry in May were announced to be 311,419, as against 319,969 in April, the only plus-300,000 months in the industry's history, and compared to 178,209 in May, 1946, an increase

of 74 per cent. May sales of portable washers with a capacity of three pounds or less, being reported this year for the first time, amounted to an additional 36,114 units, compared to 33,840 in April.

For the first five months of this year, sales of standard-size washers aggregated 1,436,629, an increase of 119 per cent over 654,073 for the same period in 1946, and compared to 2,023,981, announced for all of 1946.

Chicago enamelers club sets first meeting dates

A business meeting called by Chicago District Enamelers Club president, Wayne Deringer, was held recently to discuss meeting plans for the forthcoming 1947-48 season. Contingent upon other engagements, October 4 and December 6 were decided upon for the dates of the first two meetings.

Several matters pertaining to the operating policy of the club were discussed, and the following committee chairmen appointments were announced: *Program*, Forrest Nelson, Geuder, Paeschke & Frey; *Membership*, George Sirovy, Jr., Century Vitreous; and *Publicity*, E. E. Howe, Chicago Vitreous.

The club hopes to expand its membership and continue to show an increase in membership through popular appeal of well selected, interesting programs. The present officers—President Wayne Deringer, A. O. Smith Corp.; Vice President G. W. Hofstetter, Ferro Enamel; Secretary-Treasurer E. P. Bolin, Chicago Vitreous; Assistant Secretary-Treasurer Marcel Pouilly, American Stove—feel confident that the forthcoming meetings will serve to maintain the club's position as the outstanding one in the country.

color your ceramic bodies and glazes
with
Orefraction Rutile
High TiO2 content
for FLOOR and WALL TILES • DINNERWARE • GLASSWARE • ART POTTERY
ACID RESISTING ENAMELS, Etc.
Specify Orefraction Rutile with complete confidence for light-colored body and glaze colors. Orefraction Rutile is produced to definite high specifications controlled by petrographic and chemical analysis methods. Milling finenesses are controlled to 10 to 20 micron particle size. Send for working samples and information. Orefraction is at your service.
IMMEDIATE DELIVERY ANYWHERE!
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Activities at North Carolina State College

The Ceramic Engineering Department of North Carolina State College started the first full post-war year with 75 graduate and undergraduate students. Commencement exercises found six seniors being awarded the degree of Bachelor of Ceramic Engineering, four with honors. In addition, Joseph C. Richmond, a former graduate student of the department, and now a member of the National Bureau of Standard's Enameled Metals Section, received the professional degree of Ceramic Engineer. His thesis was titled "The Development of Specifications for Enameled Kitchenware."

For the first time in the history of the department, all graduates, except one who is planning advanced study, have accepted positions with firms in North Carolina. They are: Robert E. Brickhouse, Raymond Benbenek, John J. Brown, Jr., Richard Damman, and Francis M. Steele.

The staff of the Ceramic Engineering Department now consists of Dr. W. W. Kriegel, professor and head of the department, Dr. W. C. Bell, associate professor, and Martin W. Parcel and Charles V. Rue, instructors. The department of Engineering Research has two ceramic

2 WAYS
TO APPROACH A COLOR PROBLEM

SHADOW-BOX WITH FORMULAE OR ASK DRAKENFELD TO HELP

SHADOW-BOXING with porcelain enamel color formulae is, at best, a hit-and-miss method that uses up valuable time you need for other important work.

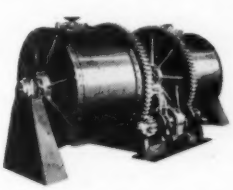
For many years porcelain enamel manufacturers have turned over their color problems to us. We'd like nothing better than to have you avail yourself of Drakenfeld's extensive experience and technological skill. We believe you will find our cooperation and know-how helpful in stepping up production, in reducing rejects, and in producing better, more profitable products.

Behind Drakenfeld performance are many years of color research and a broad knowledge of porcelain enamel production methods. We're specialists in producing colors to meet particular requirements. You can rely on Drakenfeld color service, no matter what porcelain enameled products you make — signs, home, institutional or professional utensils and appliances, or architectural and industrial porcelain enamel. Learn all about Drakenfeld products, facilities and cooperation. Give us your requirements. Write us today.

DEPENDABLE SERVICE ON: Oxide Colors . . . Screening Paste . . . Graining Colors . . . Squeegee Oils and Mediums . . . Rotospray Sifters . . . Steveco Grinding Mills . . . Porcelain Grinding Balls . . . Porcelain Mill Linings.

5 SAVINGS WITH STEVECO MILLS

Time
Labor
Horsepower
Floor Space
Initial Costs



Steveco high-efficiency duplex mills wet-grind porcelain enamel materials better, faster, and at low cost. Many outstanding construction features proved in hard day-after-day service in many plants. Wide range of sizes and linings, with all types of drives. Write for catalog, then let us study your grinding needs and recommend the correct type for your requirements.

Rotospray — a millroom must!

The Rotospray helps you get properly prepared slip for the production line. Indispensable for "reconditioning" enamel slip. Equally valuable at ground coat dip tanks. Ideal for any job that requires speedy, positive sieving. Strains through a long-life vertical screen — no clogging. Standard and Junior sizes. Capacities range from 300 to 1,000 G.P.H., depending on nature and specific gravity of product, screen mesh and sifter size. Write for descriptive folder.

Drakenfeld

YOUR PARTNER IN SOLVING COLOR PROBLEMS

B. F. DRAKENFELD & Co., Inc. 45-47 Park Place, New York 7, N. Y.

Factory and Laboratories: **Washington, Pa.**

Pacific Coast Agents: **Braun Corp., Los Angeles 21 . . . Braun-Knecht-Heimann Co., San Francisco 19**

engineers on its staff. They are Nathan W. Sewell and Robert B. Adair. Sewell is a graduate of Georgia Tech with a Master's degree from the Missouri School of Mines. Adair is a graduate of this department, having earned his degree in 1942.

A. C. S. Student branch officers for next year are as follows: Alfred G. Eubanks, Sanatorium, N. C., president; Edward C. Saleeby, Wilson, N. C., vice president, Nisbet P. Rodgers, Charlotte, N. C., secretary; Max Kahn, Baltimore, Md., treasurer, Arthur E. Lucier, New Hyde Park, N. Y., junior representative and Lewis M. Allen, Raleigh, N. C., alternative representative.

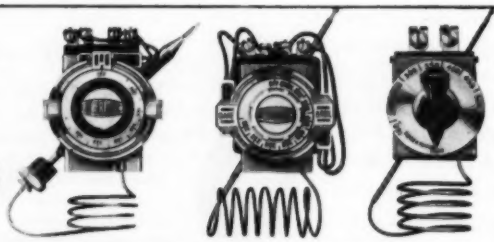
Keramos chapter officers for next year are: Willard B. Midgette, president; Charles C. Saleeby, vice president; George A. Knight, Jr., secretary; Arnold E. Rowe, treasurer, and Alfred G. Eubanks, herald.

At the North Carolina State banquet held in Atlantic City at the time of the annual meeting of the American Ceramic Society, the alumni and interested friends established a fund to honor Dr. A. F. Greaves-Walker, founder of the Department of Ceramic Engineering at North Carolina State College, by creating a fellowship for graduate study in Ceramic Engineering.

This is the Robertshaw Model H1 thermostat with Limit Switch. The thermostat cycles at set temperature. The limit switch breaks automatically when temperature exceeds dial setting by 30°F in liquid or 50°F in air. All current remains cut-off until the safety switch is closed by the manually operated reset button.

Temperature range 100°-500°F. Highly suitable for use with contactors and solenoid valves for air, gas, steam or water; also autoclaves, dressing and instrument sterilizers, incubators, coffee urns, steam tables, deep-fat fryers, ranges and bake ovens.

ROBERTSHAW
Electric
THERMOSTATS



Double pole, single-throw direct or reverse action thermostats. Combination thermostats with selector switch and automatic cut-off of fast heat. Combination thermostat and limiting switch with automatic over temperature cut-out, manual reset, etc.

ROBERTSHAW
THERMOSTAT COMPANY · Youngwood, Pa.

Seeger man gets chairmanship

C. E. Lund, director of research of the Seeger Refrigerator Company, Saint Paul, Minnesota, was recently elected chairman of the Twin City Section of the American Association of Refrigeration Engineers.

Gas industry to continue large promotional and research plan

The executive board and the executive conference of the American Gas Association have approved the recommendations of a special reviewing committee to continue upon an enlarged basis the promotion, advertising and research which the gas industry inaugurated in 1944. The new plan calls for the expenditure of approximately $4,800,000 in the next three years, an increase of about $600,000 over the initial program.

Promotional work of the American Gas Association in 1947, including national advertising, special promotional activities, residential and commercial sectional activities and publicity, will cost about $1,278,000. These activities supplement and augment those of the gas utility companies which in a normal year spend about $25,000,000, and those of manufacturers representing an additional $10,000,000.

During the first three years of the original plan, approximately $2,240,000 was allocated and spent for national advertising, $583,732 was allocated and spent for promotional activities, $1,050,000 for gas production research allocations, $450,000 for allocations for domestic gas research, and $150,000 each for industrial and commercial gas research and general technical research.

Projects, worked on in the latter group, included improved metallurgical and *ceramic heating processes*,

high temperature furnace designs, commercial refrigeration and improved heat applications to contemporary commercial appliances. General technical research covered such subjects as hydrates in pipe lines, *pipe coating and corrosion*, organic sulfur removal and storage of natural gas as a hydrate.

O. Hommel Company director dies

A director and sales representative with O. Hommel Company, Pittsburgh, Pa., Jay Goldstein, died suddenly of a heart attack Tuesday, June 3. He was in his 58th year.

Goldstein served during World War I in the American Expeditionary Forces in France with Company H, 356th Infantry, of the famous 89th Division. After demobilization he went to Pittsburgh to enter business with his brother, the late Ralph Goldstein. On June 1, 1934, he became associated with the O. Hommel Company.

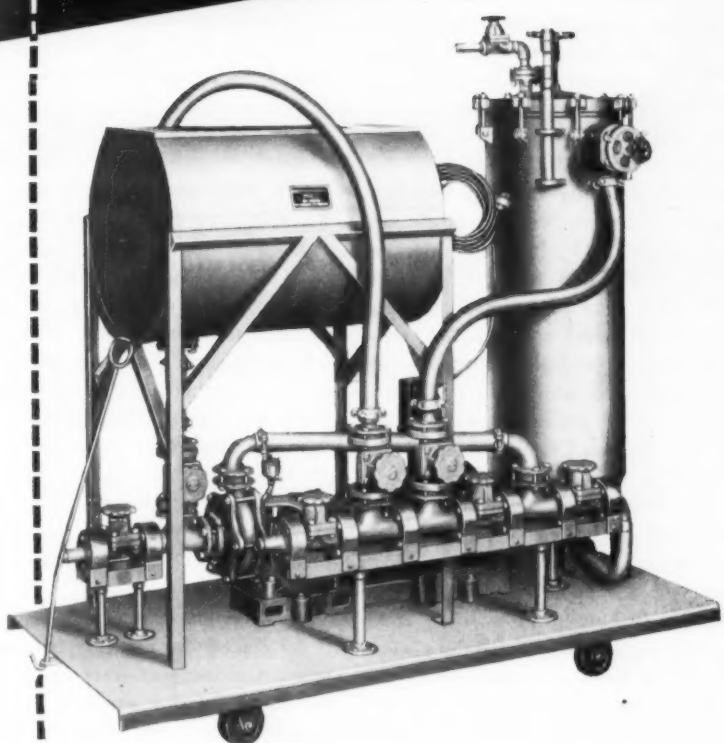
Hays retained by AWIMA

Dave Hays, long the home laundry equipment engineer of the General Electric Company, for many years active in the affairs of the American Washer and Ironer Manufacturers' Association and now president of the Preventative Maintenance Company, Bridgeport, Conn., specialists in industrial maintenance products, has been retained to serve as a consultant to the engineering standards committee of the Association.

More news Page 56 →

PICKLE ROOM *Efficiency*

BEGINS WITH INDUSTRIAL PRESSURE FILTERS



Modern production methods call for dependable equipment. Rejection losses can be eliminated by removing the cause, *impure solutions.*

Industrial Pressure Filters are used by many of the leading enameling plants because they keep the pickle room operating efficiently.

Write for recommendations on the right unit to meet your requirements. Furnished in portable or stationary types.

Automatic Filter powder feeders, special alloy pumps, filter cloth and filter aids.

INDUSTRIAL FILTER & PUMP MFG. CO.
1621 WEST CARROLL AVENUE • CHICAGO 12, ILLINOIS

A new southern stove plant for straightline production

(Continued from Page 18)

Raw material hoppers hold full mill load

Frit is unloaded from box car on the frit siding by belt conveyor which elevates it to frit storage above the mill room, some 12 mill additions being employed. Frit consumption per year will approximate 1,750,000 pounds, or 35 carloads, in normal plant operations. Mill additions are made up in hoppers which drop their charge into the mills. The mill room has one each of 2500 lb., 2000 lb., 600 lb., 400 lb., 250 lb., and 100 lb. mills. Hoppers are the same capacity as the mills and are reloaded as the mills are grinding. Average grinding time is 5 hours. Milled enamels are pumped into 14 platformed storage tanks of 300 gal. capacity each, and the mix is drawn from these through centrifugal sieves and magnetic separators into the 30 or 60 gal. pressure tanks, of which 22 are maintained. Demineralized water is used in all enamels, the hardness kept from 2 to 12 p.p.m.

The mill room is trenched on two sides and one end. Its floor is pitched and can be quickly washed down. At one side, a completely equipped laboratory is housed in a small connecting room. The ceramic engineer in charge pulls a sample of every mill. Complete laboratory tests are regularly made in relation to specific gravity, fineness, flowability, surface texture, gloss, bond, coverage, color, etc.

Ground coat dipped for ground-coat-only finishes—sprayed for finish coat parts

Ground coat is sprayed automatically on all exterior parts. The work moves on a five-strand 125′ cable conveyor through two 8′ x 16′ automatic spray booths—the first spraying backs and the second spraying faces. It then comes by cable to two 8′ x 12′ staggered booths where edging is accomplished manually. Still on cable, the work passes through a 40′ ground coat dryer (propane fired at 275-300° F.), cable moving 12 to 16′/min. It is conveyed to transfer point for movement into first firing.

The continuous 8′ overhead conveyor serving ground coat dip moves 150′ from dip to transfer. Easel type hangers, sloped to drain right, carry ware through a 20′ continuous dryer, operated at the same temperature as spray dryer. A 10′ square reinforcing booth is stationed at dryer end. This chain carries 150 easel hangers, spaced 2′ apart. There is 300′ of chain. The work comes at transfer to the continuous furnace chain.

The plant presently maintains one 88′ x 16′ continuous 1000 kw porcelain enameling furnace with capacity of 2,500 sq. ft./hr. It has 45′ of hot zone and is used to fire both ground and cover coats. Provision has been made for integrated addition of another continuous furnace when expansion demands. On coat type hangers, work moves through ground coat firing at 1570° F., chain moving at 10′/min. The ware is then conveyed to the inspection area. There are 780′ of furnace chain involved.

This inspection area and its table is the center of much directed movement. Ground coat ware going into the range interior assembly is here transferred to a 400′ conveyor chain which carries it to finished part storage, ready for assembly. If the ware requires cover coat, it is transferred to the white cover coat line. The white ware returning from finish coat and burning is transferred to conveyor moving to finished parts storage. Ware here moves in 30″ x 4′ baskets with adjustable shelves.

Ware is transferred from furnace chain to cable conveyor at the finish coat line. This moves 12′/min. and is the same as used in ground coat automatic spraying. The ware passes through a plenum room containing two parallel 8′ x 10′ hand spray booths and an 8′ x 16′ automatic spray booth, all serviced by cable conveyor. These are housed in a 22′ x 44′ plenum or pressure room with controlled atmosphere to prevent any contamination. The work then passes by cable through a 40′ continuous dryer and into the brushing area having eight tables, two of them 20′ long. Work is then transferred to furnace chain and moves into the same continuous electric furnace for final burning at 1530° F., chain moving at 16′/min. The work then goes to inspection and transfer to conveyorized delivery which brings it to finished parts and sorting storage.

A sand blast, using No. 45 steel grit, is located along the north wall of the plant to clean all cast iron parts before enameling. In this area, de-enameling operations are also performed. Three 5′ x 10′ tanks, served by overhead monorail hoist, represent the equipment. De-enameling involves salvage and re-work of parts rejected by inspector.

Industry coordinating committee report

(Continued from Page 21)

the PEI is to help publicize the Annual Forum. Secretaries will supply complete rosters of the memberships to the PEI for the mailing of announcements.

Dr. Spencer-Strong made a plea for getting more memberships in the ACS among enamelers.

Nathan Klein outlined the policy of the Eastern Club in selling company memberships in addition to individual memberships.

The possibilities for developing a "circuit" for outstanding speakers was discussed.

Advance publicity advocated

Advance publicity of meetings and programs was urged in order to get the benefit of all possible advance notice on meetings through the trade press.

Mackasek suggested the possibility of drawing upon suppliers *within* the clubs for discussions on enameling processes to supplement the more formal technical papers.

A prime Coordinating Committee policy was again reiterated—That the Coordinating Committee activity

....nothing spectacular, just..... EVERYDAY PRACTICE

Every pound of OHCO Enameling Oxide leaving our manufacturing plant is always the same in uniformity, color value, and strength.

All OHCO Enameling Oxides are manufactured in our own plant with over half a century of "know-how" packed with each shipment.

Laboratory Controlled Production of Ceramic Supplies

THE O. HOMMEL CO.
PITTSBURGH 30, PA.
Pacific Coast Agents
L. H. BUTCHER CO.

- FRIT for Steel, Cast Iron or Pottery
- CERAMIC COLORS
- CHEMICALS
- BRONZE POWDERS
- METAL POWDERS
- SUPPLIES
- EQUIPMENT

Our Technical Staff and Samples are available to you without obligation. Let us help you with your problems.

World's Most Complete Ceramic Supplier

is confined to semi-annual meetings and that all activity is strictly of a "suggestion" or advisory nature, with representatives reporting back to the individual clubs for decisions on any actions suggested.

Porcelain enameled mouldings for all-steel poster panels

(Continued from Page 20)

the new porcelain enameled moulding would be complimentary to the advertising copy, rather than focus attention on the moulding itself. Panels were then dismantled and shipped to French Lick, Indiana, for inspection by the OAAA.

After several days of discussion, the new design was unanimously approved, and Joseph C. Hodges, secretary of the Association, with the assistance of Charles Keesling, head of the plant development department of the Association, was placed in charge of the furthering of improvements, refinements and manufacture.

In April, 1946, the new panel was shown to almost 1,000 members and guests of the Association when the national convention was held in New York. Tiffin Art Metal Company demonstrated a back structure and moulding for the job.

The moulding was accepted officially as a new standard at the New York meeting.

Manufacturing problems

The standarization by the Association brought us to the point of manufacture. The early experimental mouldings were, of course, hand fabricated and, as a result, built up strains and stresses which made porcelain enameling difficult. Dies and jigs had to be made to handle the moulding in fabrication. Special burning tools were provided to take advantage of maximum furnace capacity, and special spray booths and brushing equipment had to be engineered and built. Studies were made regarding maximum and minimum carloads, application of imprints, design of crates for shipping, and methods of distribution.

All of the problems have now been solved by the Committee, and those working with them. Improvements, of course, will be made, but the basic principals which confronted the industry have been solved. The result is a beautiful moulding to be used by members of the Outdoor Advertising Association of America. It is designed to properly frame the advertiser's copy in dignified picture frame style, yet it is sufficiently neutral so as not to detract from the delicate pastel colors.

The panel is capable of using a 24 or 26 sheet poster. It will withstand unusually high winds, is easy to erect and, properly cared for, will last indefinitely. The new panel lends itself exceedingly well to illumination.

The new panel has an over-all size of 24′ 6″ long by 12′ 1-⅝″ high with a 19″ moulding. This moulding has a grey perimeter 9-¾″ wide and a white space 8″ wide around the inside with a 1-¼″ gold yellow bead separating the grey from the white, leaving a posting surface of 22′ 11″ by 8′ 11-⅝″. The standard imprint is 4″ x 36″. The moulding is made in ten sections and the entire panel requires only 161 bolts to fasten the sections and angle rails to the posts and the moulding to the rails.

Thousands of new poster panels have porcelain enamel

The porcelain enamel finish has been thoroughly tested and found to be unaffected in any way from either cold water or cook-up type adhesives. To keep it in brand new condition, it need only to be washed with cold water or, in extreme cases, with a commercial alkaline cleaner. The operator saves all the expense of repainting and always has a neat, clean moulding.

Texlite engineers are now in the process of developing a new cold cathode reflector using a porcelain enamel trough. It is expected that it will materially cut down on current consumption and maintenance. The brackets for attaching the reflector to the panel will be bolted directly to the posts so that no damage can occur to the moulding and so that they will remain firmly in place.

Thousands of the new panels have already been, or are in the process of being, erected throughout the country. Over 90% are finished in porcelain enamel because the outdoor operators appreciate the importance of having a finish that lasts and needs no major servicing.

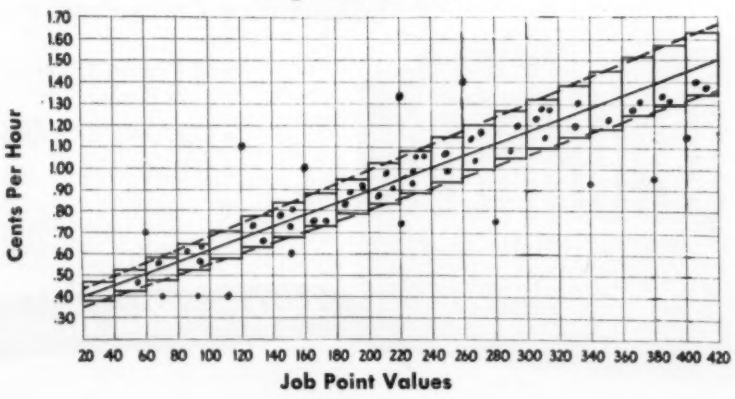
The technique of job evaluation

(Continued from Page 24)

engineers selected should have full cognizance of the labor situation and may deal direct with worker representatives at the outset. A consulting firm should be able to convince both labor and management of the fairness

FIGURE IV

Wage Rate Schedule



The Doodle Bug Scooter, a completely packaged unit produced for the Beam Mfg. Co.

From the start, the fine engineering, careful designing and all-around high quality of the Doodle Bug have made it an item of outstanding sales appeal. It is through New Monarch's highly efficient production and assembly methods and the knowledge accumulated throughout our many years of manufacturing experience that the Beam Mfg. Company has been able to meet the demand for this very practical scooter.

You, too, will find it to your best interest to avail yourself of Monarch's extensive facilities and vast experience. Let us help you to increase your production—either by supplying special parts, or the whole as a completely packaged unit.

For those having their own material, our services are now available.

MONARCH QUALITY

When you think of Stampings, think of

NEW MONARCH MACHINE & STAMPING CO.

406 S W. NINTH STREET DES MOINES 9, IOWA

of its methods and the desirability of injecting sound reasoning by an outside observer into the negotiation of job evaluation. In many cases labor can be shown the advantages in the possibility of eliminating bickering and dissatisfaction through uniform impartial treatment for all concerned.

After all, labor should be as much interested as management in eliminating inequities. An underpaid man should receive immediate attention. An overpaid man is a source of trouble because others can point out that they are doing as much work for less money, and there is no effective argument against it.

Industry in general has found it is forced into job evaluation in order to remain competitive. All plants are likely to find themselves in the same situation as labor competition and product competition begin to squeeze. The leaders in job evaluation will probably be in better shape to withstand the pressure when it comes, in addition to knowing that they have done their utmost to deal fairly with their employees.

Easy marketing

(Continued from Page 32)

over twenty separate and distinctly different methods of attachment were being suggested by manufacturers before the war. The standardization and simplification of attachment methods will go far to widen the use of the material.

The question of price

There are two types of cost which the building designer must always consider—the first cost and the maintenance cost. The impression persists that manufacturers of porcelain enamel panels, who are used to quantity purchases of small and production-line items of sale such as stoves, refrigerator linings, kitchenware, and directional signs, do not understand the prices normally paid for building products. Actually considering the service porcelain enamel can render, it is a comparatively inexpensive material even when custom made. Price will rarely be a factor in preventing the use of porcelain enamel for a building where its other characteristics indicate its suitability. The maintenance cost of this easily cleanable material, which requires no painting or attention, is a powerful sales argument.

Porcelain enamel manufacturers are not entirely at home in the building industry and as a result their sales efforts through advertising, promotion, reference literature, and direct selling have been spotty, not concerted as an industry effort, nor phrased in the user's language.

Made available in standard units for easily anticipated use, where standardization is possible, plus the availability of custom-formed panels to special design, is standard practice in the glass, wallboard, plywood, lumber, millwork, and countless other building industries. There is no reason why it won't work for the porcelain enamel industry.

The only thing that won't work is to try to make porcelain enamel to look like and to be used as some other material to which it is vastly superior.

Furniture market observations

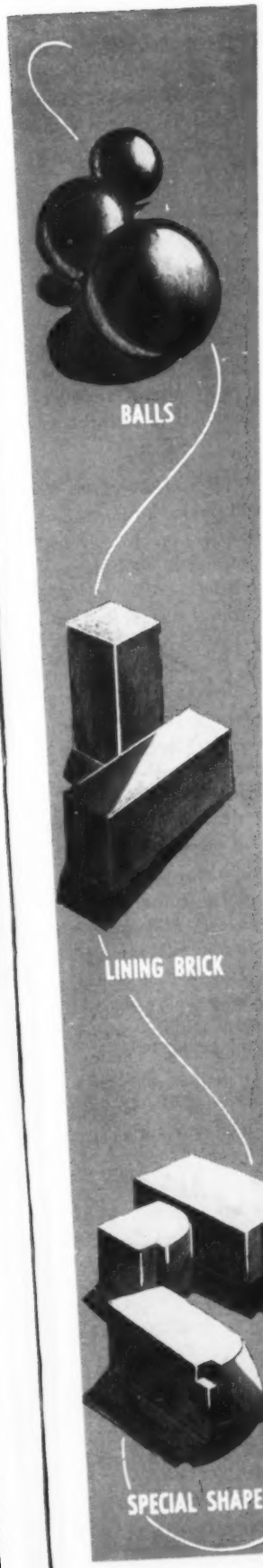
(Continued from Page 37)

newest and most appealing designs in kitchen furniture are again showing porcelain enamel, and the trend should unquestionably increase as supplies are made available.

One of the bright spots for porcelain enamel is a new automatic washer, introduced by one of the leading appliance producers, with porcelain enamel *inside and out*. We have contended from the first that there is one product on which substitute finishes could not stand the gaff of normal use and remain permanently beautiful—that is the washing machine. With at least one prominent washing machine producer contending that from 35% to 40% of future sales will be on automatic type washers, this move is

to Page 56 →

"Ask them what they got for washing faces, Mom."



MORE PRODUCTION With McDANEL Products

Next time your enamel mill needs relined use McDanel Mill Lining Brick. Extra fired for durability, McDanel Lining Brick lengthen the time between relinings, keep your mills in profitable operation over longer periods.

Just as outstanding in performance are McDanel Grinding Balls. Hand rolled to assure faster, more thorough grinding, McDanel Grinding Balls make ideal partners in your enamel production. You'll find these two McDanel products will cut costs and increase the level of efficiency in your mill operations.

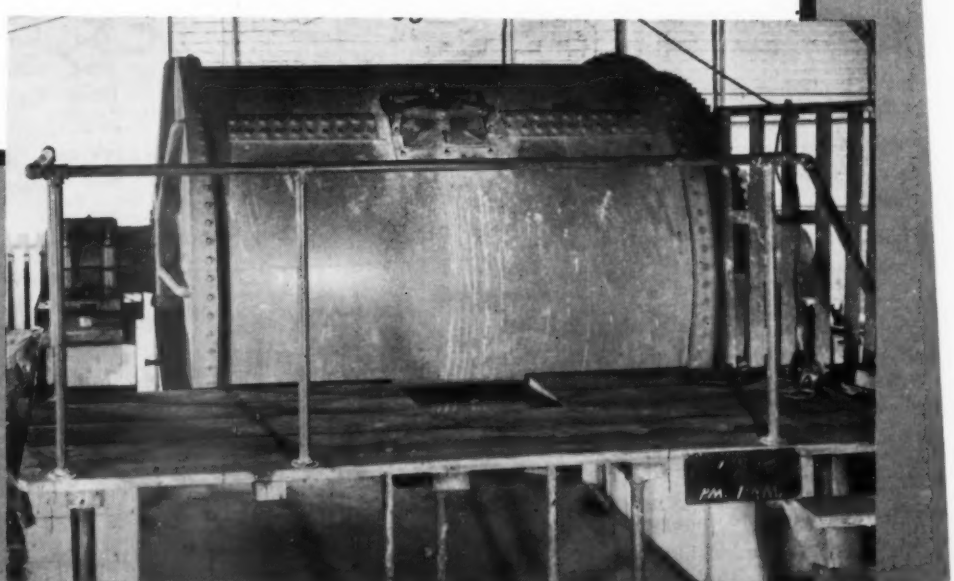
PORCELAIN GRINDING JARS & MILLS
MILL LINING BRICK • DOOR LINING BLOCKS
SPECIAL MILL LINING SHAPES
MILL HEAD ASSEMBLIES
METAL COVERED GRINDING JARS & JAR MILLS

McDANEL REFRACTORY PORCELAIN COMPANY

•

BEAVER FALLS, PA.

CHICAGO VITREOUS ENAMEL PRODUCT CO. CICERO 50, ILLINOIS
exclusive representative for the Enamel Industry



→ *from Page 54*

particularly significant. Coast distributors are said to believe that as high as 60% may go to the automatics. *Here* we *know* procelain enamel should be a must.

Among the range manufacturers, there is an increasing tendency to the *complete* protection of inside parts through the use of ground coat porcelain enamel. A few of the manufacturers have practically eliminated the use of black japanning in favor of the more durable, heat-, corrosion- and rust-resisting finish.

While many of the dishwashers use porcelain enamel for important parts, we predict that the trend will eventually have to be to all porcelain enamel, inside and out, on the cabinet type models.

Porcelain enamel has found a definite place on the inside of floor furnaces and room heaters as a permanent protection against the conditions found in heat exchangers and other interior parts. The next step here should be the broadening of its use for exteriors.

Industry news

→ *from Page 49*

Four plants in one

Virtual completion and utilization of greatly expanded production facilities at the Sandusky, Ohio, plant of Apex Electrical Manufacturing Co., was announced by C. G. Frantz, president.

A new production system, through which, in effect, four plants are operated in the general area provided by one factory building, is being utilized.

Each of the production areas is a self-contained unit, according to E. C. Buchanan, operating vice president. The four "plants" are built around (1) quarter horsepower motor production, (2) vacuum cleaners, (3) washing machines, and (4) porcelain enameling plant.

Herman Cook to Ingersoll

According to an announcement by the company, Herman Cook joined the Ingersoll Steel Division, Borg-Warner Corporation, on July 14. He is in charge of the porcelain enameling division in the company's Chicago plant.

Cook was, for a number of years, associated with another Borg-Warner affiliate in his connection with the Norge division at Muskegon, Michigan. For the last few years he has been with O. Hommel Company, Pittsburgh.

Washington round-up

→ *from Page 33*

dent's Council of Economic Advisors to make a survey of existing steel capacity. It is Senator Murray's contention that if new steel capacity is needed, we should find out just what kind of capacity. If certain products are short during a period of high demand, we should know what products.

To implement his program, Senator Murray will introduce shortly a bill which will authorize RFC to make long term loans at low interest rates to private industry for construction of new steel capacity. RFC would first attempt to participate with private banking institutions in such loans.

Another provision of the proposed Murray bill would direct RFC to waive payments on loans and interest during periods of economic disturbance, which means that the small business builder of new steel capacity would not pay anything on his loan during a depression when his plant was operating at a low rate or closed down.

Although Congress is making quite a to-do about the small manufacturer who cannot get any steel, the big steel industrialists are probably his only hope when they promise that by the end of the year they will be in a position to take care of all requirements. It is a certainty that Congress is not going to get the steel for the small manufacturer by that time by any means available to the legislative branch of the government.

Installment credit — regulation W

Congress will make a move before this session is over to end by legislation Government controls on consumer installment credit as administered by the Federal Reserve Board.

Regulation W, the installment control regulation, limits to 15 months installment sales of refrigerators, cooking stoves and ranges, washing machines, ironers, dishwashers, automobiles and several other items. A down payment of one-third is required.

The Bureau of Census reports that shipments of porcelain enameled products fell off from $8.1 million in April to $7.6 in May. Of the total May shipments, $6.6 million represented finished enameled products. The remaining $1.0 million represents enameling done on a jobbing basis. Cooking, household and hospital utensils, constituted the largest per cent of the total amounting to $3.3 million.

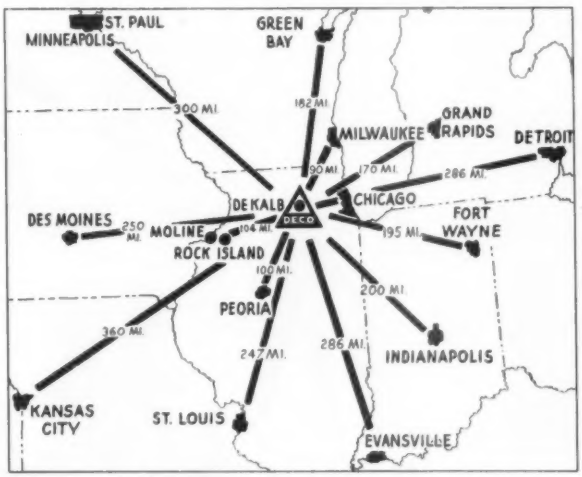
Value of May Shipments and Jobbing Receipts

	Shipments	Jobbing Receipts
Total	$7,629,696	$1,004,508
Signs	462,231	82,546
Stove parts (sold as such)	792,101	332,014
Refrigerator parts (household and commercial)	606,361	176,921
Reflectors, including fluorescent	449,414	
Cooking, household and hosp. utensils	3,282,667	11,022
Table tops (kitchen cabinets, dinette breakfast sets)	409,536	
Store fronts and other architectural parts	134,567	
Washing machine parts	942,788	190,415
Plumbing ware	58,869	58,869
All other	491,162	152,721

Jobbing operations which are not noted are included in the "all other" group in order not to disclose identity of individual companies.

A new enameling service

ready to serve you!



DeKalb Enameling Co., Inc.

QUALITY PORCELAIN ENAMELING

Telephone 2471

204 North 4th St. · **DeKalb, Illinois**

Revolutionary!

BURN-OFF and RUST-PROOFING IN ONE OPERATION

by BURDETT *(Gas-Fired)* INFRA-RED PROCESS

For example: In the Waterloo Valve Spring Compressor Company installation, the Burdett Burn-off Rust-proofing Oven requires no attendant labor. Production items are hung on the conveyor and passed thru to the Burdett Infra-Red Baking Oven without further handling. Labor costs are reduced from hours to minutes. It's New! It's Superior! It's Revolutionary!

Ask for complete facts.

Infra-Red Burn-Off Rust-Proofing Oven at Waterloo

3401 West Madison St., Chicago 24, Ill.

BURDETT MANUFACTURING CO.
INFRA-RED GAS BURNERS

"At least 4 to 1"

The following is quoted from a recent letter from a user of *finish* Classified Advertising:

"Just for the records you might like to know that our previous ads run in 'Finish' for ..... have outpulled other publications at least four to one. This includes '_____ _____,' '_____ ___,' and '_____ _____.' We are well satisfied with the results we have been getting. Keep up the good work."

●

Finish Classified Ads Get Results

PORCELAIN ENAMELING

Capacity Available

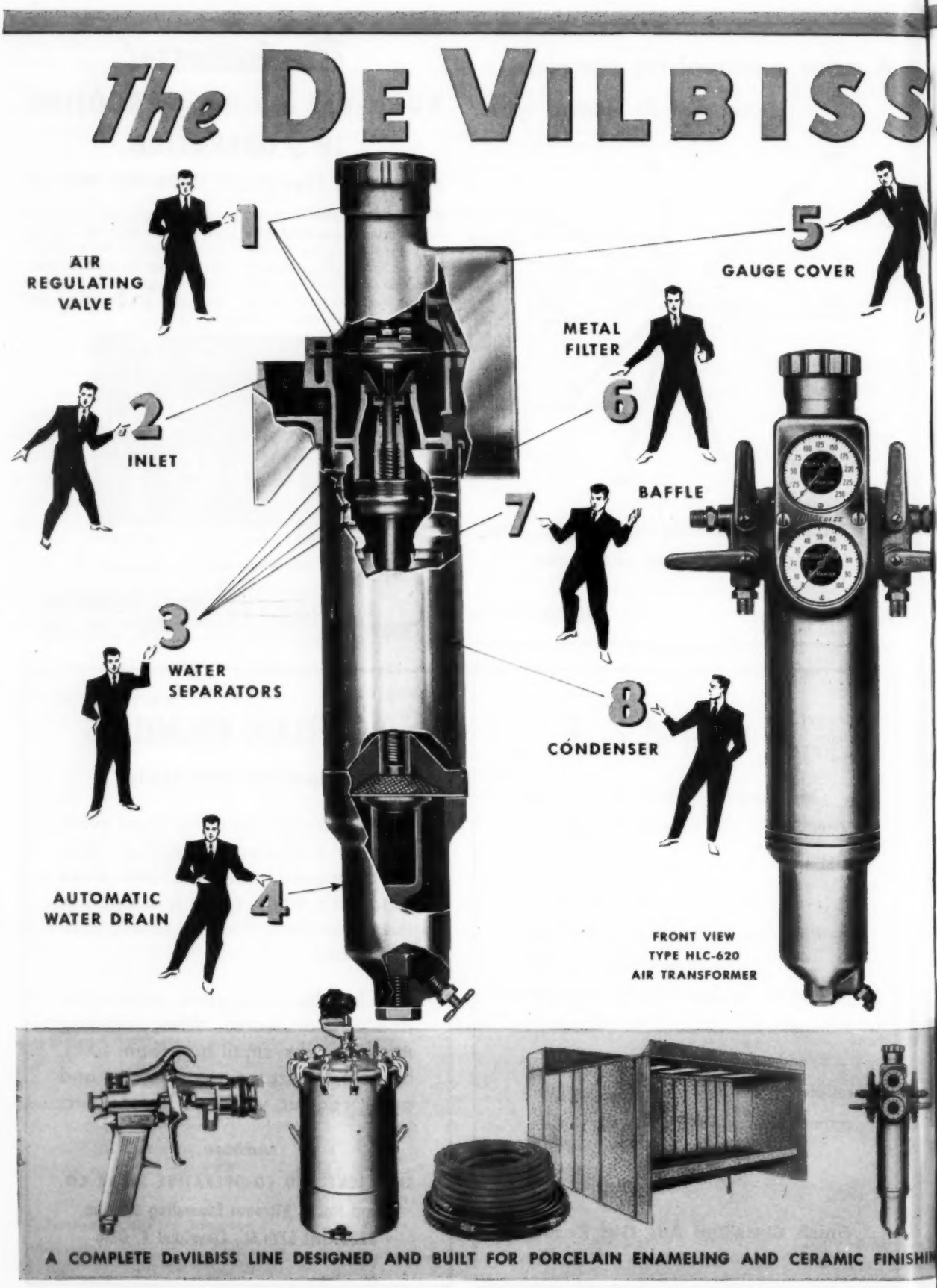
Have two continuous furnaces available for eight hours each day. Also, have ground coat line and Binks automatic white spray line open at the same time. Plant is totally conveyorized.

Can handle stove parts, table tops, and similar ware. Also, washing machine tubs, small bathroom sinks, heaters, hydrator pans, inner and outer roaster wells, reflectors, etc.

Address:

THE CLEVELAND CO-OPERATIVE STOVE CO.
Plant No. 3, Vitreous Enameling Division
2323 East 67th St., Cleveland 4, Ohio

The DeVILBISS



A COMPLETE DeVILBISS LINE DESIGNED AND BUILT FOR PORCELAIN ENAMELING AND CERAMIC FINISHI

AIR TRANSFORMER

TYPE HLC

Uniformly regulated, clean, oil and moisture-free air **AT THE GUN**

GUARANTEES FINE PORCELAIN ENAMEL FINISHES

Because DeVilbiss Air Transformers consistently deliver clean, oil and moisture-free air to the spray gun at properly regulated pressures—they are essential for producing finest porcelain enamel finishes.

The DeVilbiss HLC illustrated here provides many unusual operating advantages. With it, absolutely accurate pressure regulation is possible. A tough but exceptionally sensitive diaphragm responds to fine adjustment. It has air capacity sufficient for two production guns. Filtered matter can't build up in the air path and cause obstruction.

And the HLC is entirely mechanical. Centrifugal separators throw out all moisture and foreign matter. A unique metal filter traps the accumulation. An automatic water drain, which requires no attention, continually discharges this moisture and residue. Filtering efficiency of the HLC always remains constant. There are no filter packs to become saturated and by-pass accumulated dirt. Maintenance is negligible—there's nothing to wear out or replace. Plating of all parts prevents corrosion or oxidation from fumes and other compounds.

Whether you require Transformers, Guns, or Spray Booths, it will pay you to consult your DeVilbiss Engineer. Every item in the DeVilbiss Ceramic line has special protective features to guard against abrasive wear. The result is lower maintenance costs, finishes of finest quality, and fewer production shutdowns.

THE DEVILBISS COMPANY • TOLEDO 1, OHIO

Canadian Plant: WINDSOR ONTARIO

DE VILBISS *means* **Quality** *in all four . .*

SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS